970

INSTRUCTION BOOK

This knitting machine is for home use.

"IMPORTANT SAFETY INSTRUCTIONS"

"When using an electrical appliance, basic safety precautions should always be followed, including the following:"

"Read all instructions before using (this appliance)."

"DANGER - To reduce the risk of electric shock:"

1. "An appliance should never be left unattended when plugged in. Always unplug this appliance from the electric outlet immediately after using and before cleaning, servicing or changing mechanical parts or accessories."

"WARNING - To reduce the risk of burns, fire, electric shock, or injury to persons."

1. "Do not allow to be used as a toy. Close attention is necessary when this appliance is used by or near children."

2. "Use this appliance only for its intended use as described in this manual. Use only attachments recommended by the manufacturer as contained in this manual."

3. "Never operate this appliance if it has a damaged cord or plug, if it is not working properly, if it has been dropped or damaged, or dropped into water. Return the appliance to the nearest authorized dealer or service center for examination, repair, electrical or mechanical adjustment."

4. "Never operate the appliance with the air openings blocked. Keep the air openings free of lint, hair, loose clothes and the like."

5. "Never drop or insert any object into any opening."

6. "Do not use outdoors."

7. "Do not operate where aerosol (spray) products are being used or where oxygen is being administered."

8. "To disconnect, turn all controls to the off ("O") position, then remove plug from outlet."

9. "Do not unplug by pulling on cord. To unplug, grasp the plug, not the cord."

10."Do not remove cover, no user serviceable parts inside. Refer servicing to qualified service personnel."

"SAVE THESE INSTRUCTIONS"

FOR USERS IN THE UK, EIRE, MALTA AND CYPRUS ONLY.

If your knitting machine is fitted with a 3 pin non rewireable BS plug then please read the following.

IMPORTANT

If the available socket outlet is not suitable for the plug supplied with this equipment, it should be cut off and an appropriate three pin plug fitted.With alternative plugs an approved fuse must be fitted in the plug.

NOTE

The plug severed from the main lead must be destroyed as a plug with bare flexible cord is hazardous if engaged in a live socket outlet. In the event of replacing the plug fuse, use a fuse approved by ASTA to BS 1362, i.e. carrying the ASTA mark, rating as marked on plug.

Always replace the fuse cover, never use plugs with the fuse cover omitted.

WARNING

DO NOT CONNECT EITHER WIRE TO THE EARTH TERMINAL WHICH IS MARKED WITH THE LETTER 'E', BY THE EARTH SYMBOL ⏚ OR COLOURED GREEN OR YELLOW.

The wires in this mains lead are coloured in accordance with the following code:

Blue	Neutral
Brown	Live

As the colours of the wiring in the main lead of this appliance may not correspond with the coloured markings identifying the terminals in your plug, proceed as follows.

The wire which is coloured blue must be connected to the terminal which is marked with the letter 'N' or coloured black or blue.

The wire which is coloured brown must be connected to the terminal which is marked with the letter 'L' or coloured red or brown.

WHEN USING A B.S. 1363 FUSED PLUG A 3 AMP. FUSE MUST BE FITTED..

If the terminals of the plug are unmarked consult a qualified electrician before use.

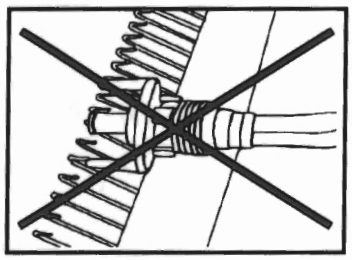
WARNING

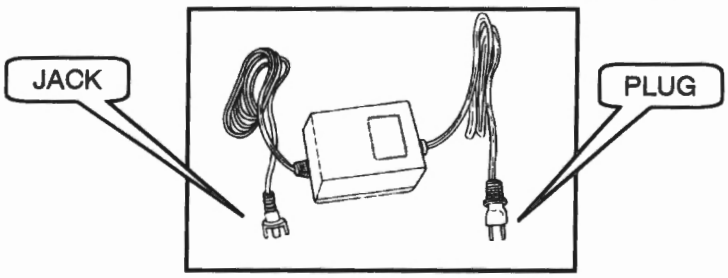
Use extra care when using adapter !

Read the following instructions before using (this appliance).

When removing the jack from the knitting machine
always ensure that the plug is disconnected from the socket.
When putting the plug into the socket
always ensure that the jack is connected to the knitting machine.

To reduce the risk of fire or damage, do not allow the jack to be disconnected when the plug is in the socket. The adapter can short-circuit when the jack touches fine metal parts such as a cast-on comb or needle.





◆ These instructions are intended for any adapter.
Extra care should be taken in handling electrical appliances so as not to touch metal parts on the knitting machine.

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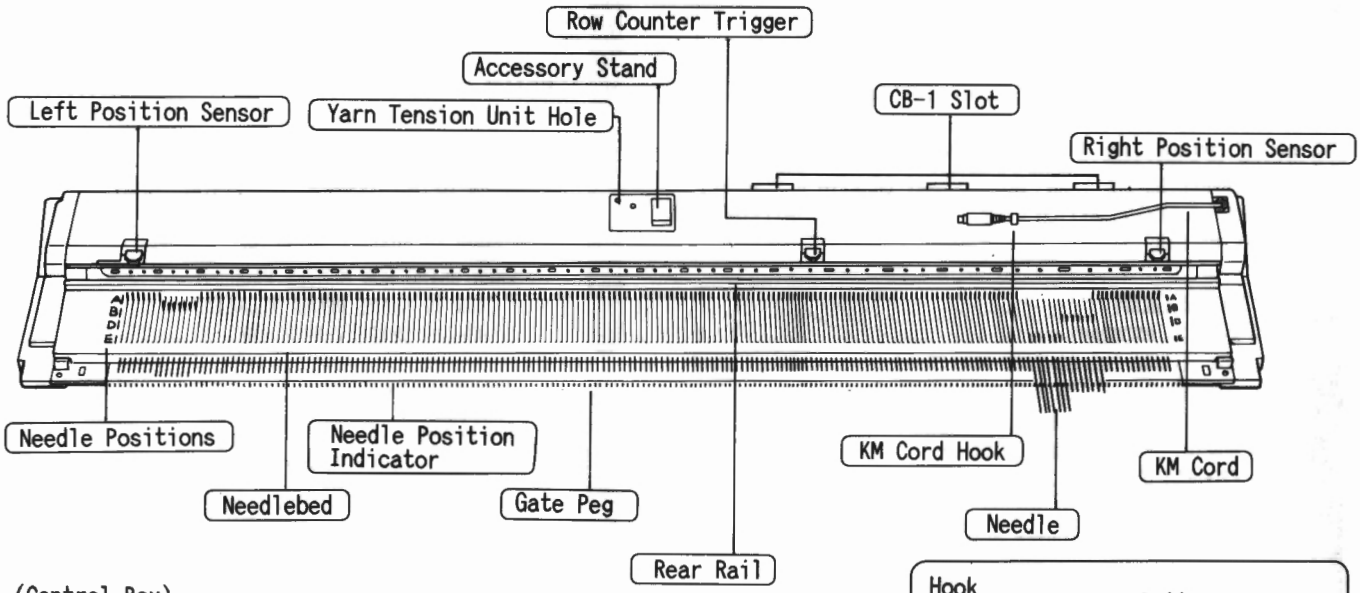
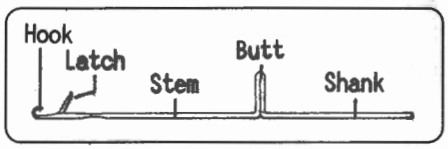
HOW TO USE YOUR KNITTING MACHINE

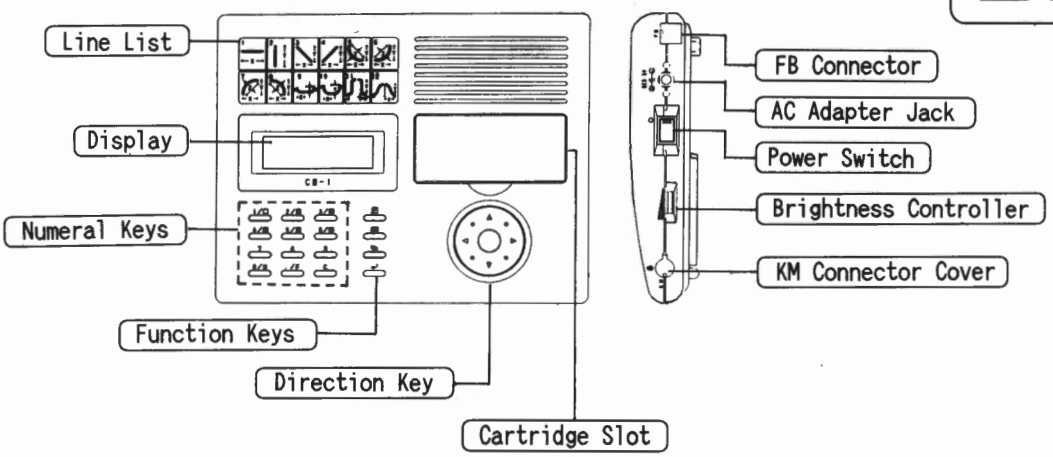
PARTS NAME

●MACHINE

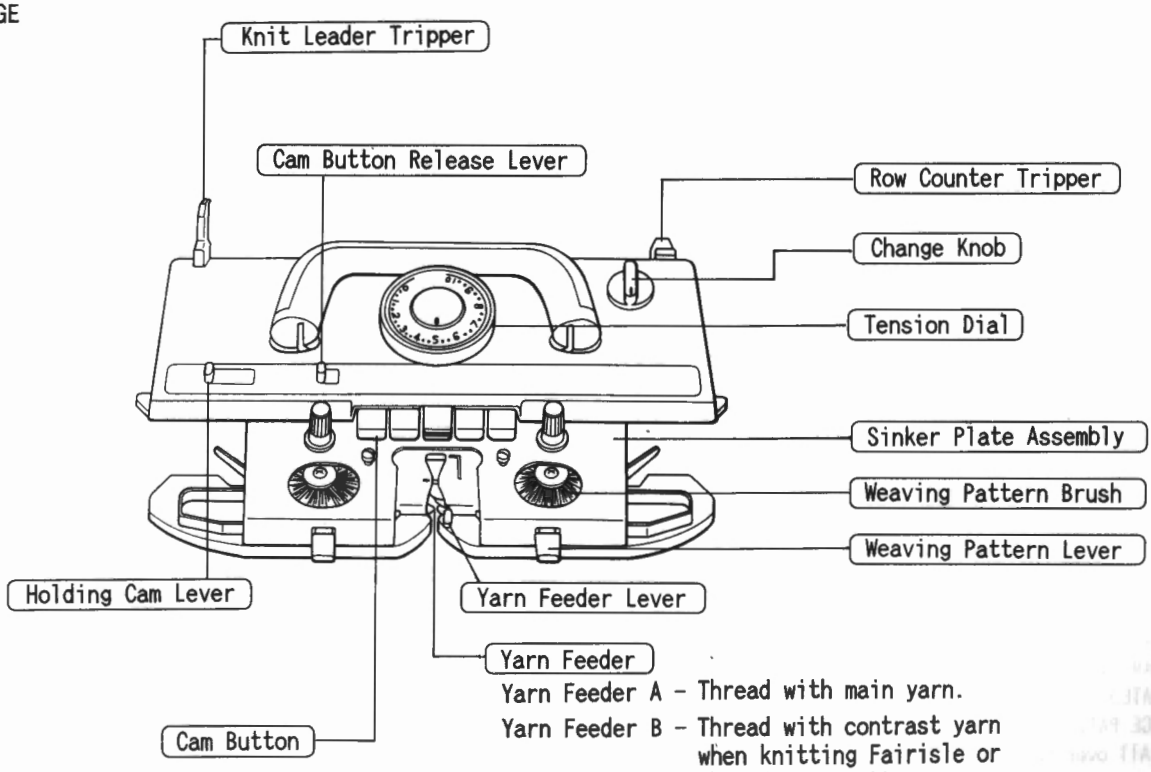




●CB-1 (Control Box)



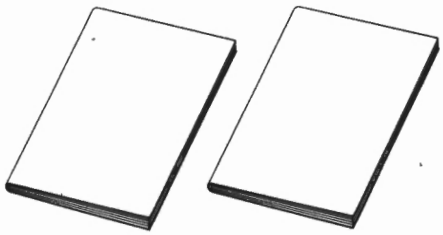
●K-CARRIAGE



Yarn Feeder A - Thread with main yarn.
Yarn Feeder B - Thread with contrast yarn when knitting Fairisle or Thread Lace pattern.

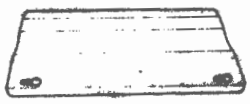
●ACCESSORIES

Pattern Book
(Stitch World III)

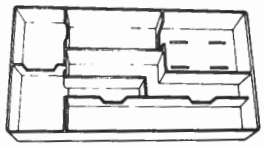


Making Garments Book

Accessory Box Lid

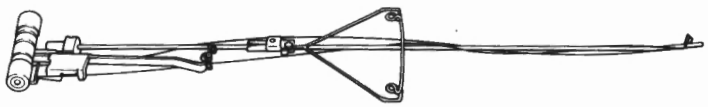


Accessory Box



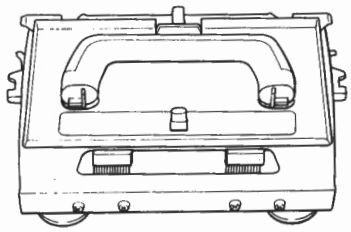
CB-1 Setting Plate

Yarn Tension Unit



L-Carriage

Cast-on Comb

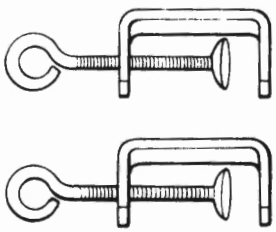


Extension Rails

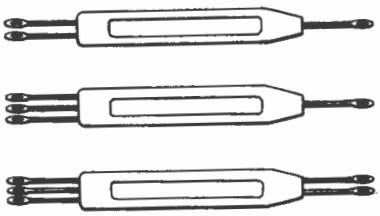
Plating Yarn Feeder

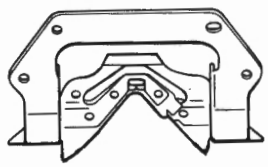
Latchet Tool

Table Clamp



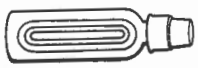
Transfer Tool



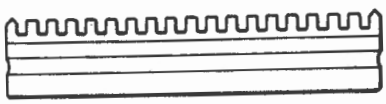


Yarn Wax (in case)

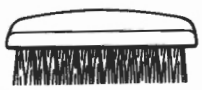
Oil



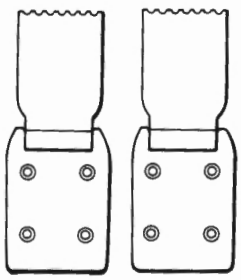
Needle Pusher



Hand Brush



Claw Weight

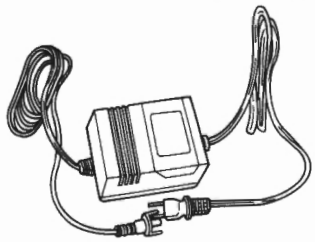


Cast-on Thread

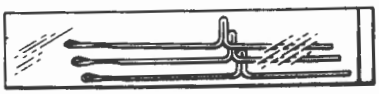
AC Adapter

Always use the adapter
for exclusive use of KH-970.

Tapestry Needle
(It is in the bag with spare needles)

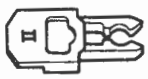


Spare Needle



Carriage Lock

Tripper for I-Carriage



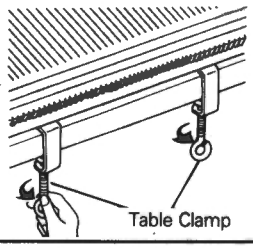
G-Carriage Sensor Cam

SETTING UP YOUR KNITTING MACHINE

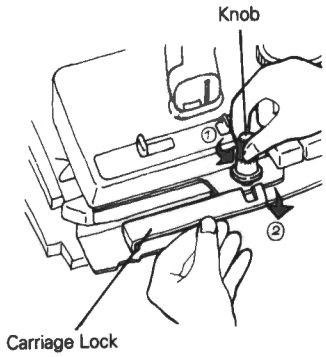
If you use only the CB-1, follow the step from No.11

①Place the machine on a firm table, with the Carrying Case Handle away from you and unlock the catches.
Lift up the case top and pull it towards you to release the lid.

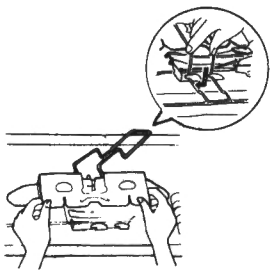
② Take two Table Clamps out of the Accessory Box. Fasten the machine to the table with the Table Clamps.



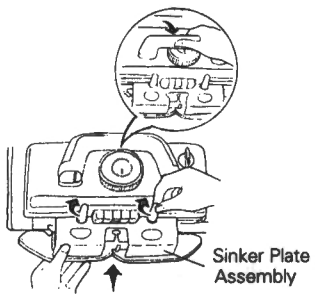
③Loosen the Knob and remove the Carriage Lock.



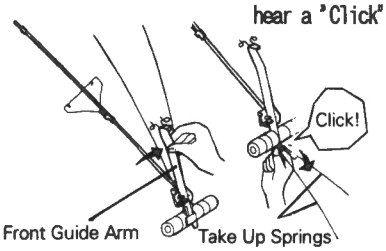
④Unlock the Spring and remove the Sinker Plate Assembly from the lid of the Carrying Case.



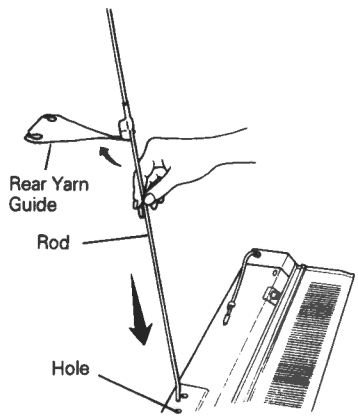
⑤ Screw the Sinker Plate Assembly onto the K-Carriage. Raise the Carriage Case Handle by pulling it towards you.



⑥ Take the Yarn Tension Unit out of the Carrying Case lid.
(1)Lift the Front Guide Arm in the direction of the arrow as far as it will go.
(2)Turn back the Take-up Springs until you hear a "Click".

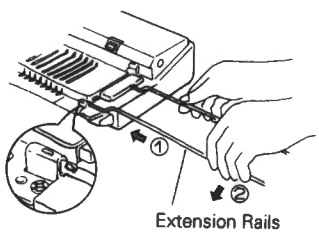


⑦Raise the Rear Yarn Guide.
Insert the end of the Rod into the hole at the rear of the machine.

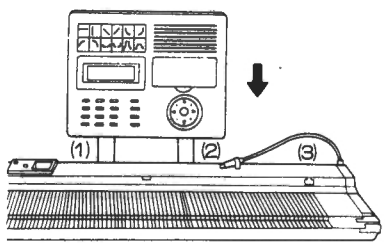


⑧ Remove the Extension Rails from the Carrying Case. Insert them into the holes at both ends of the machine.

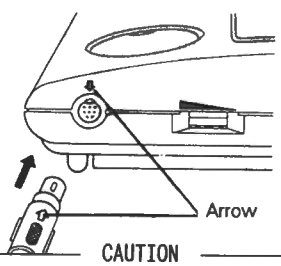
NOTE:
Set up the Extension Rails to the machine to prevent the Carriage dropping.



⑨Take the CB-1 Setting Plates out of the Accessory Box. Insert each Setting Plate into the CB-1 Slot (1) and (2). If using the Knit-Leader, insert the Setting Plates into the CB-1 Slot (2) and (3). Then, insert the CB-1 into the Setting Plates.

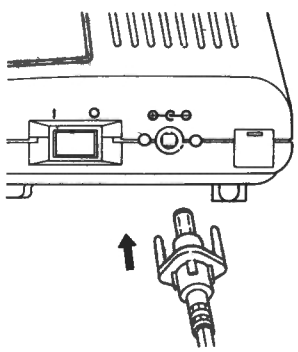


⑩After Turning the power off, open the KM Connector Cover and insert the KM Cord into the KM Connector Jack, matching both arrow marks.



CAUTION
Unless the arrow marks match, the KM Cord might be damaged.

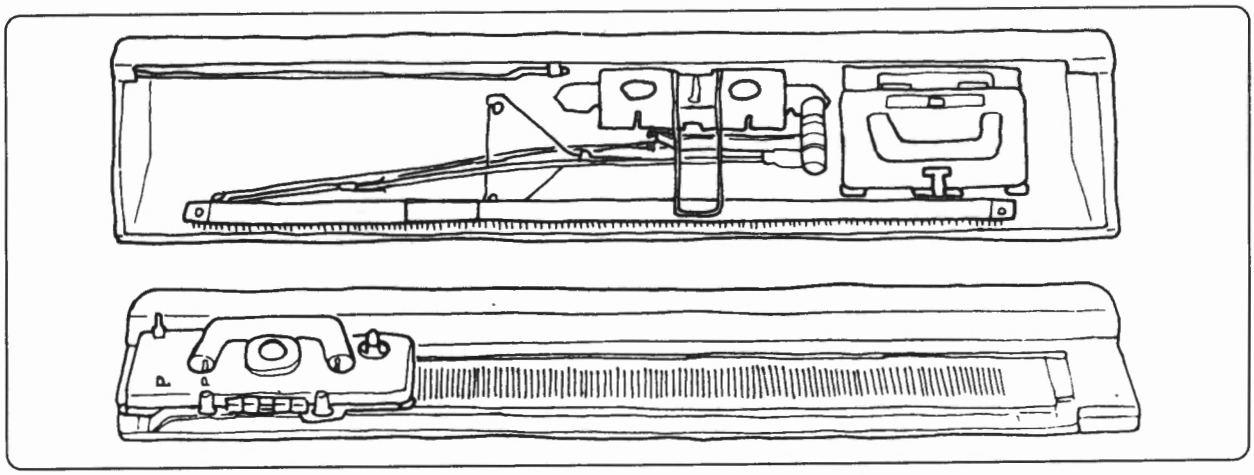
⑪ Plug one end of the AC Adapter into the CB-1, and the other into the power supply socket.



NOTE:
If You take out the KM Cord, close the KM Connector Cover

NOTE:Do not worry about the heat from the AC Adapter and the rear of the knitting machine, when you use this knitting machine.

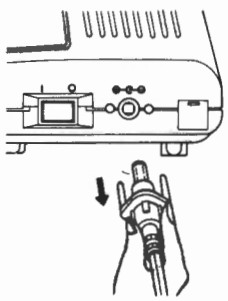
REPLACING YOUR MACHINE INTO THE CARRYING CASE



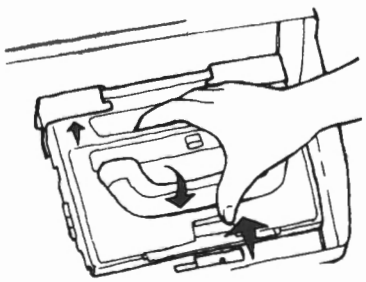
This is how your machine should look when it is packed away.

※The Instruction Manual, the Accessory Box, the CB-1, and the AC-Adapter cannot be stored in the knitting machine.

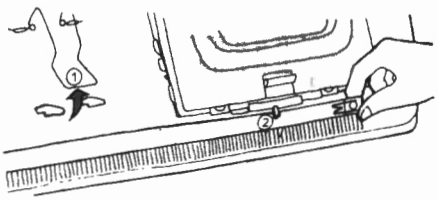
① After turning the power off, take off the AC Adapter. Take the KM Cord off the machine.



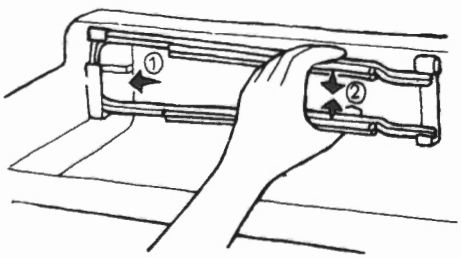
② Fold down the Handle on the L-Carriage. Push the Release Button and replace the L-Carriage in the Carrying Case.



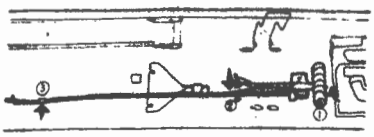
③ Lift the Spring and replace the Cast-on Comb back into the Lid.



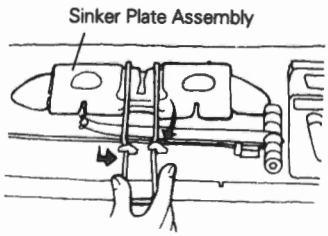
④ Put the Extension Rails in the Carrying Case.



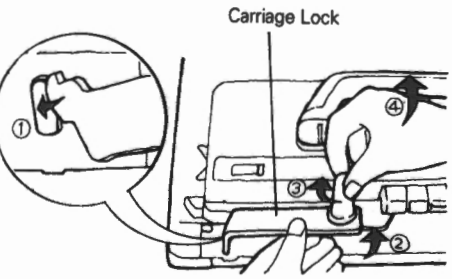
⑤ Replace the Yarn Tension Unit into the Case in the order 1, 2, 3, as shown.



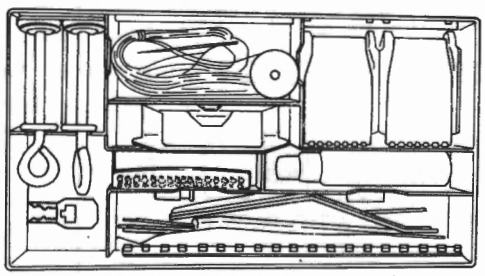
⑥ Loosen the Knobs and remove the Sinker Plate Assembly from the K-Carriage. Put the Sinker Plate Assembly in the Case where indicated, and secure it with the Spring.



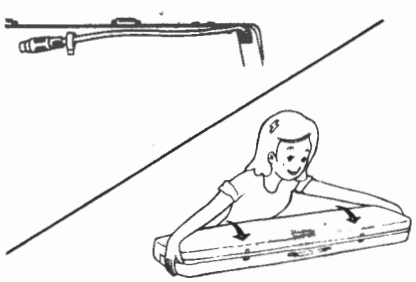
⑦ Push all Needles back to A position and fold down the Handle on the K-Carriage. Insert the Carriage Lock into the hole in the left side of the machine and secure the K-Carriage as illustrated.



⑧ Replace the CB-1 Setting Plates and the other parts into the Accessory Box.



⑨ Put the KM Cord into the KM Cord Hook. Hold the Lid and replace it as shown. When it is in place, lock the two catches.
NOTE:Replace the Lid without catching the Cord in the case.



【K-CARRIAGE】

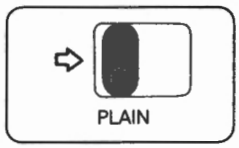
●HOLDING CAM LEVER

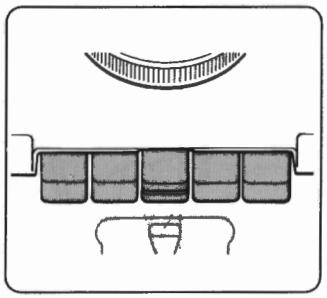
For Partial Knitting (H...Holding position)

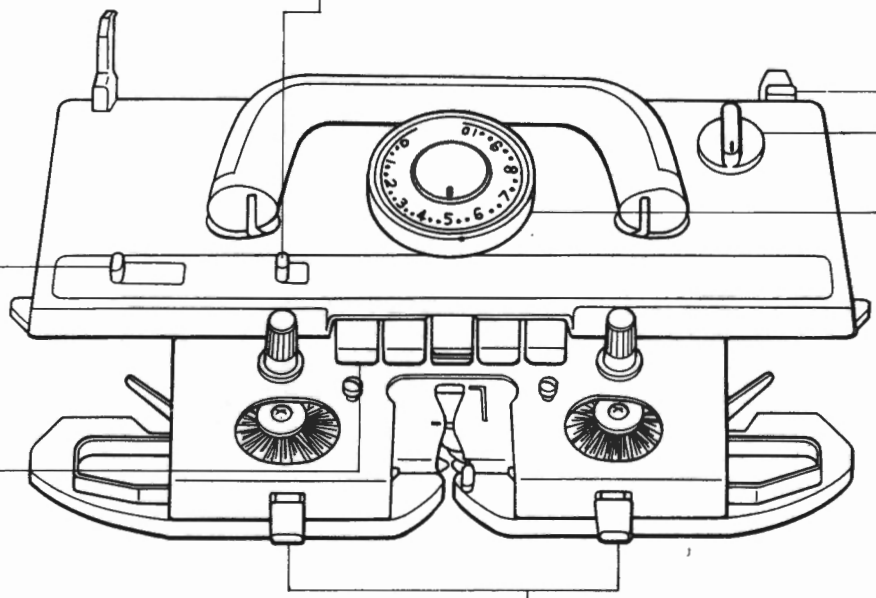
Others

●CAM BUTTON RELEASE LEVER

Release the Cam Buttons by sliding the Cam Button Release Lever to the right.





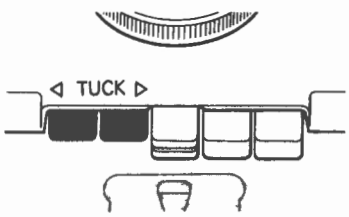


●CAM BUTTONS

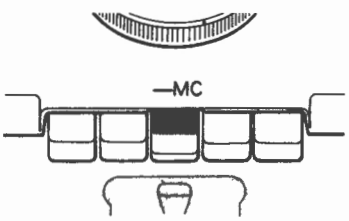
Use the Cam Buttons according to the pattern you want.

●WEAVING PATTERN LEVERS (Sinker Plate Assembly)

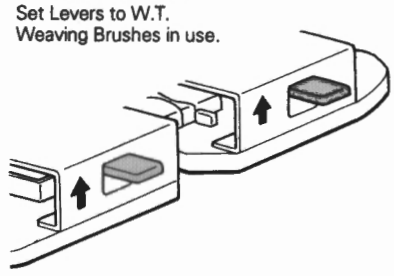
TUCK STITCH PATTERN
Push in the 2 left buttons at the same time.



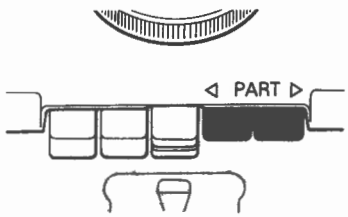
FAIRISLE PATTERN
Push the Upper middle button only. (—MC...Multi Colour)



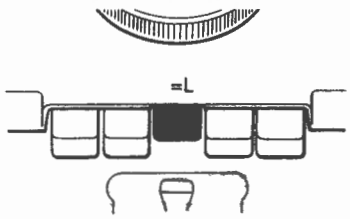
WEAVING PATTERN
Set Levers to W.T.
Weaving Brushes in use.



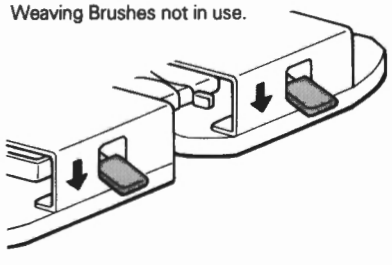
SKIP STITCH PATTERN
Push in the 2 right buttons at the same time.



THREAD LACE PATTERN
Push in both middle buttons (Upper & Lower) at the same time. (=L...Thread Lace)



Other occasions
Set Levers to N.
Weaving Brushes not in use.



※Do not operate the K-Carriage if you have depressed both Middle Button(Upper & Lower) plus either the Tuck Button, or Part Buttons.

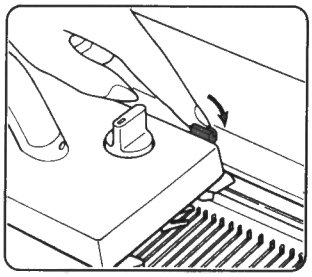
●ROW COUNTER TRIPPER

Always set the Row Counter Tripper into working position.

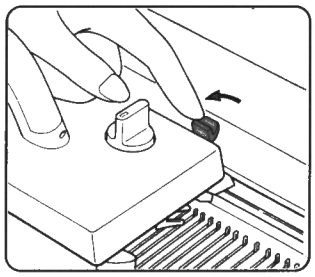
Make sure that the Row Counter Tripper is set in working position before knitting with GARMENT POSITION INPUT.

Make sure that the Row counter Tripper on the K-Carriage has passed the Row Counter Trigger every row.

Working Position



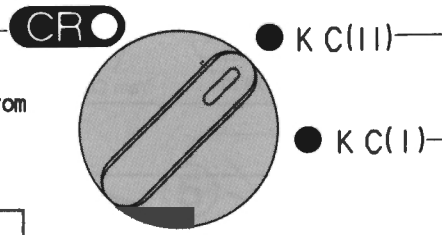
Non-Working Position



●CHANGE KNOB

CR(Carriage Release)

This setting is used to release the K-Carriage from the Needlebed.



N.L

This setting is used for Stocking Stitch and Lace Patterns.

※The Cam Buttons are automatically released when you turn the Change Knob from KC to N.L.

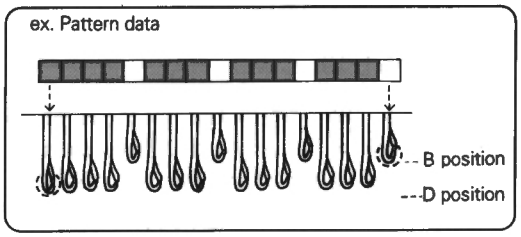
KC(I)KC(II)

These setting are used for pattern knitting such as Tuck, Skip, Weaving, Fairisle, Thread Lace, etc.

During pattern knitting, the needles are automatically set into B position or D position according to the pattern.

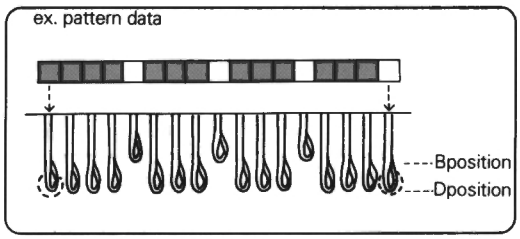
KC(II)

End needles are selected B or D position according to the pattern data.



KC(I)

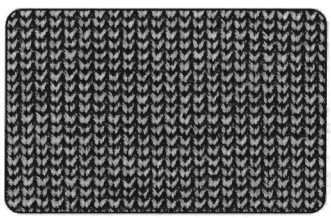
End needles are brought to D position every row disregarding the pattern data.



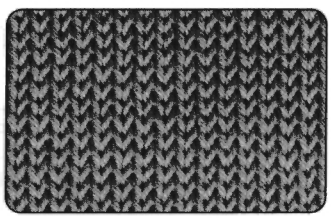
●TENSION DIAL

This dial is graduated from 0 to 10, each space being subdivided into three parts. With this dial you can alter the size and tension of your stitches. 0 is the tightest tension(i.e. the smallest stitch) and 10 is the loosest tension(i.e. the largest stitch). You should adjust the dial to a higher or lower number according to the thickness and type of yarn you are using.

As there are so many different types of yarn, it is impossible for us tell you which Tension Dial Number you should use. You must decide for yourself which is correct for your yarn by working sample swatches. Use this information might as a rough guide only.



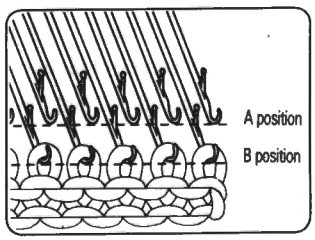
・Setting the Dial to lower number



・Setting the Dial to higher number

Type of Yarn	Recommended Tension Dial Number
Very fine yarn 1/2 ply	0～3
Fine yarn 2/3 ply	3～5
Medium yarn 3/4 ply	4～6
Thick yarn 4/Double knit	7～10
※Thicker Doubleknits	4～6

※ For very thick or bulky yarns, use every other needle or even every third needle.



●NEEDLE POSITIONS

On both sides of the Needlebed there are the letters A,B,D, and E.

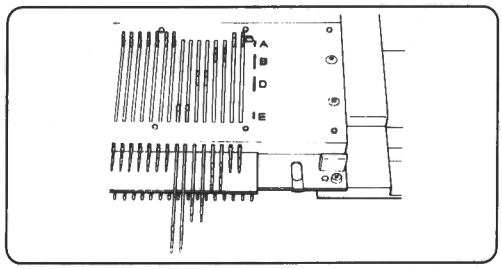
A-Non-Working Position.(NWP)

B-Working Position.(WP) Used for general knitting purposes.

D-Upper Working Position.(UWP) Selected needles are brought to this position in pattern knitting by the K or L-Carriage.

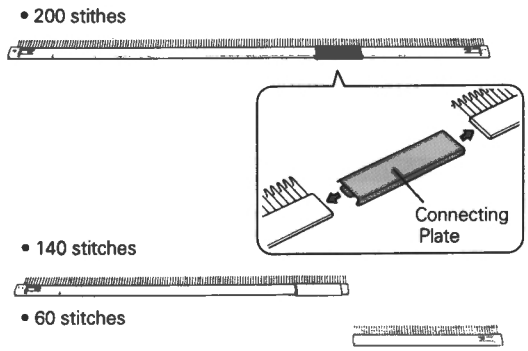
E-Holding Position.(HP) Needles in this position do not knit when the Holding Cam Lever is set to H.

※When you pack your machine away, always return the needles to A position.

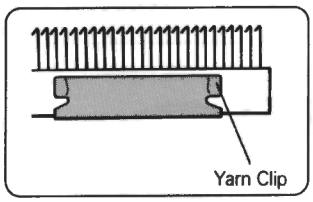


●CAST-ON COMB

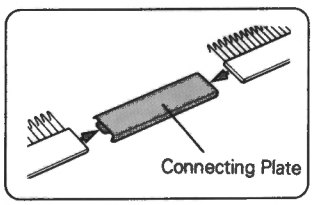
The Cast-on Comb is in two sections of 140 and 60 needles, making a total of 200 needles.
You can take these apart by removing the Connecting Plate if you wish to shorten the length.



Using the Connecting Plate



With a 140 or 60 stitch Cast-on Comb
Use the Connecting Plate as a Yarn Clip by attaching it to the end of the Comb.

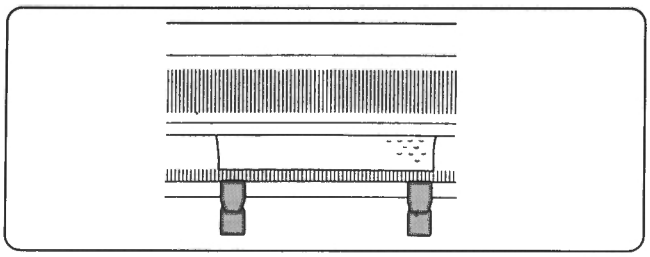


With a 200 stitch Cast-on Comb
Use the Connecting Plate to join the two Cast-on Combs together.

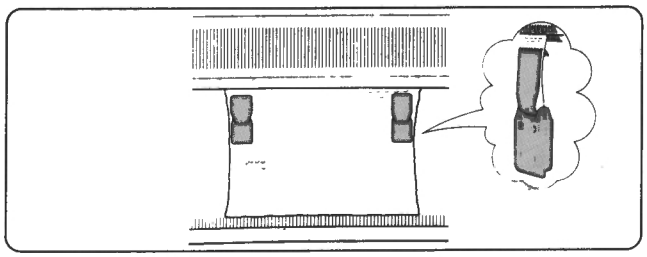
●CLAW WEIGHTS

These are used to help your knitting hang properly and to prevent it from lifting up while you work.

・Hang Claw weights onto your Cast-on Comb so that your knitting hangs evenly.



・If the edges of your knitting do not lie smoothly, hang Claw Weights on both edges of the actual knitting.

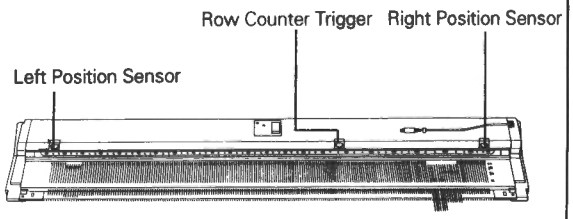


●NOTE

There are three kinds of Sensors on this knitting machine.

・Right Position Sensor
・Left Position Sensor
・Row Counter Trigger

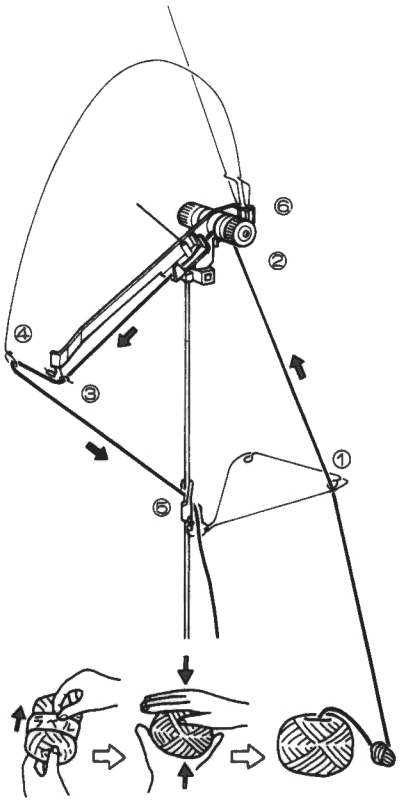
※You should not move each Sensor by hand.
Always keep each Sensor clean.

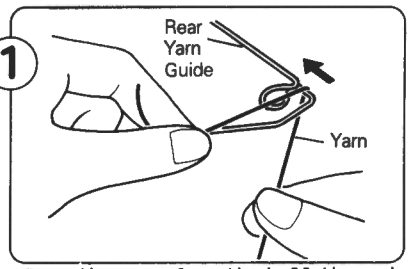


BASIC OPERATION (Stocking Stitch)

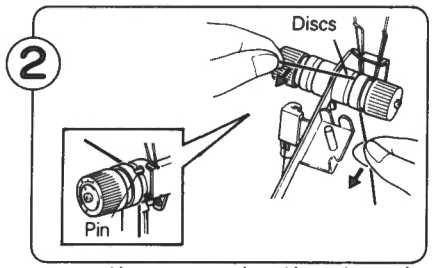
Stocking stitch is the most basic and simplest stitch in machine knitting. Practice this until you can do it correctly.

THREADING THE YARN

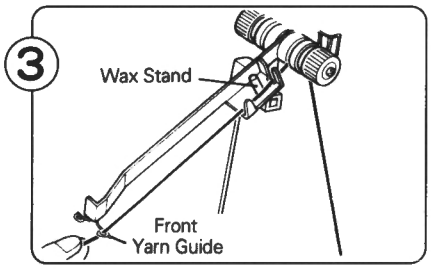




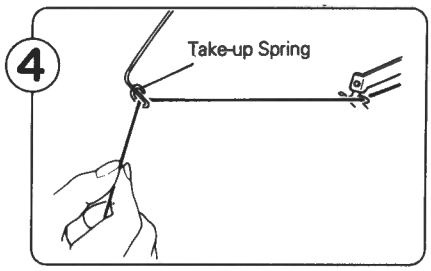
Pass the yarn from the ball through the Rear Yarn Guide sliding the yarn through the eyelet.



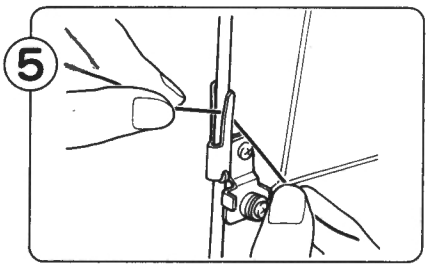
Pass the yarn under the Pin and between the two Discs from behind. Hold the yarn as shown above, and pull it towards you so that the yarn goes under the Pin.



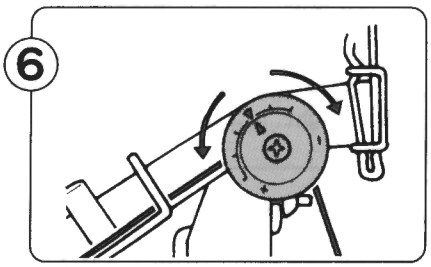
Thread the Front Yarn Guide.



Thread the yarn into the eyelet of the Take-up Spring.



Clip the yarn under the Yarn Clip.

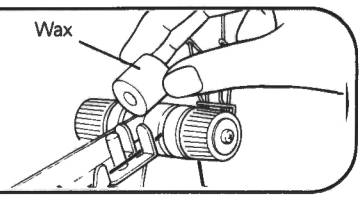


Set the Arrow Mark according to the thickness of the yarn.

▶◀…for medium yarn
▶+…for fine yarn
▶—…for thick yarn

WAX

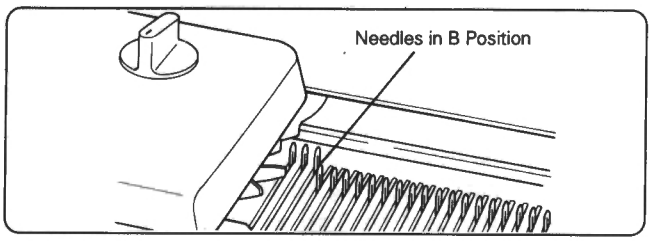
When you start to knit, place the Wax which you will find in the Accessory Box on the Wax Stand. The Wax helps the yarn to slide smoothly.



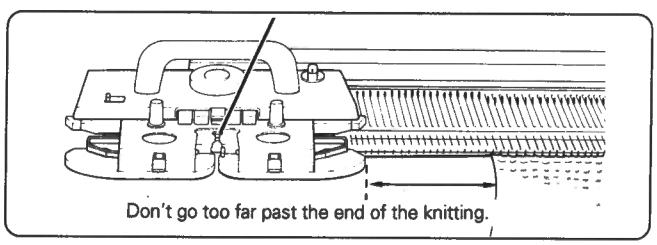
HOW TO CAST ON WITH A FINISHED EDGE

Before you move the K-Carriage

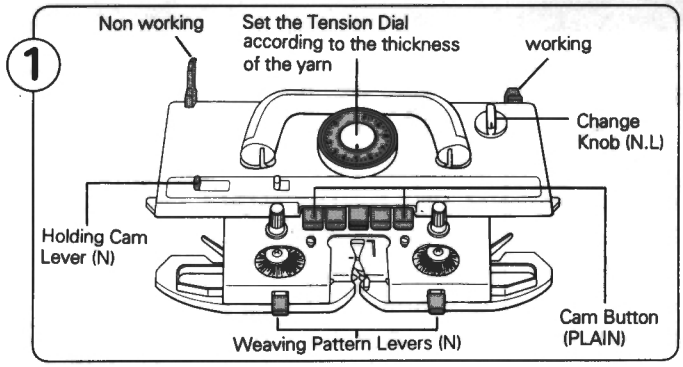
· Watch out for the following points



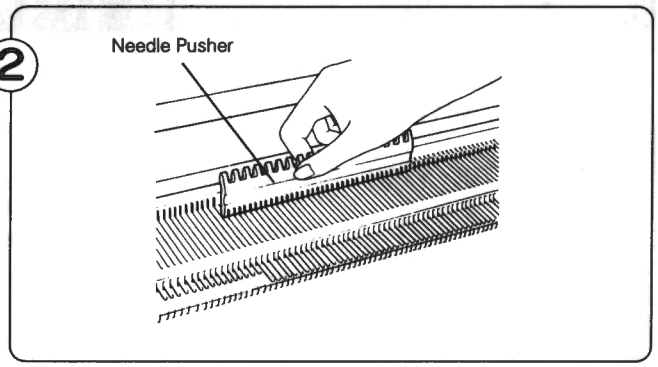
Make sure the K-Carriage (or the L-Carriage) clears the knitting before you move it back in the other direction. You will hear a "Click" at the end of a row.



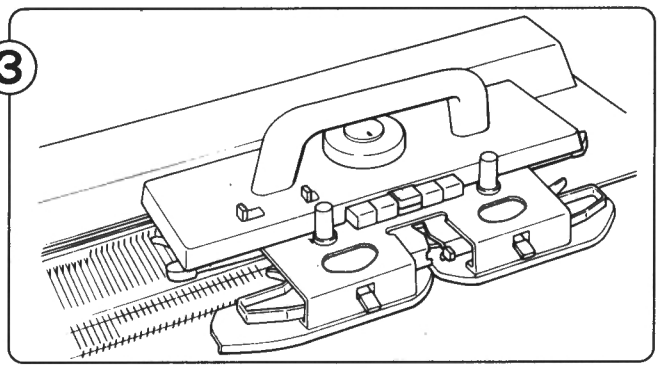
Do not move the K-Carriage too far beyond the knitting. This will cause a loop to form.



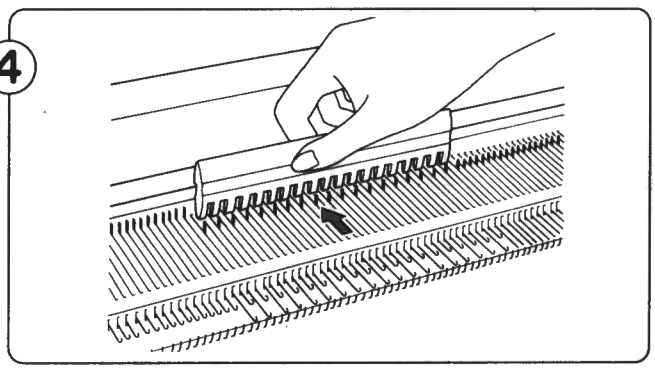
Set the K-Carriage as shown above.



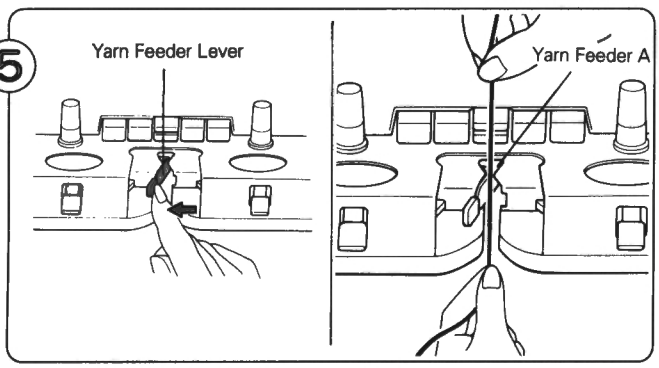
Using the flat side of the Needle Pusher, bring forward 60 needles to B position (30 needles on either side of the centre mark "0").



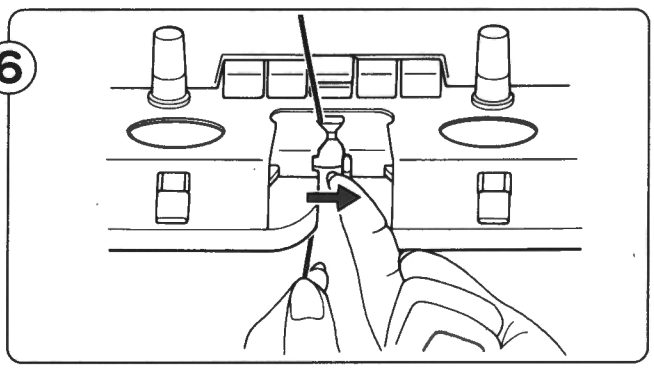
Move the K-Carriage across the Needlebed a few times to align the needles, ending with the K-Carriage on the right.



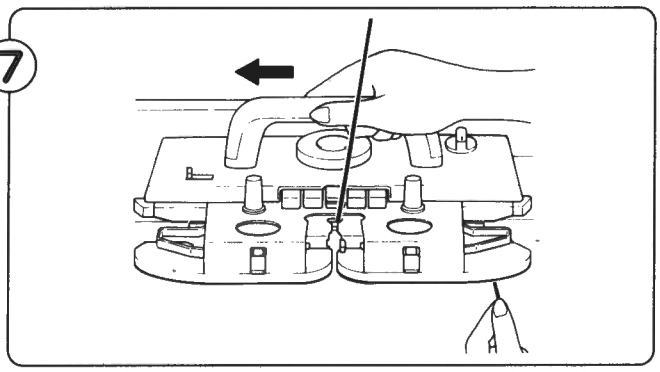
Using the 1/1 side of the Needle Pusher, take every other needle back to A position.



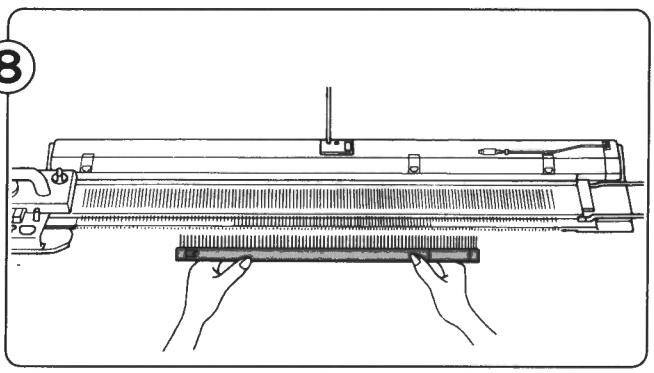
Open the Yarn Feeder A by pushing the Yarn Feeder Lever to the left. Take the yarn from the Yarn Clip and thread it into the Yarn Feeder A.



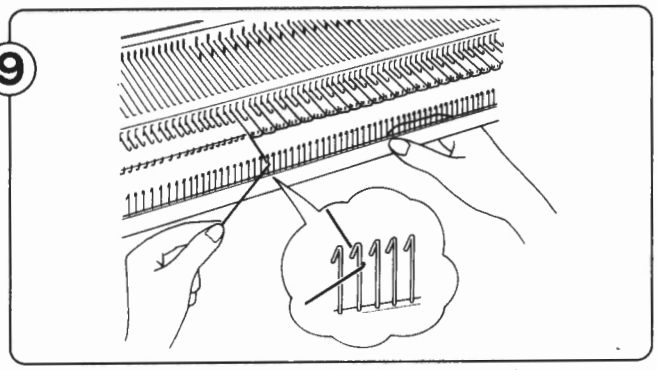
Keeping hold of the end of the yarn with your left hand, close the Yarn Feeder Lever.



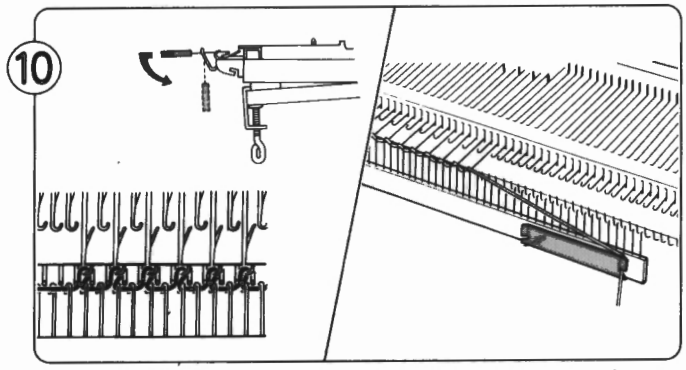
Still holding the yarn end gently, slowly move the K-Carriage to the left. Once you feel the needles catch the yarn, you can release the yarn end.



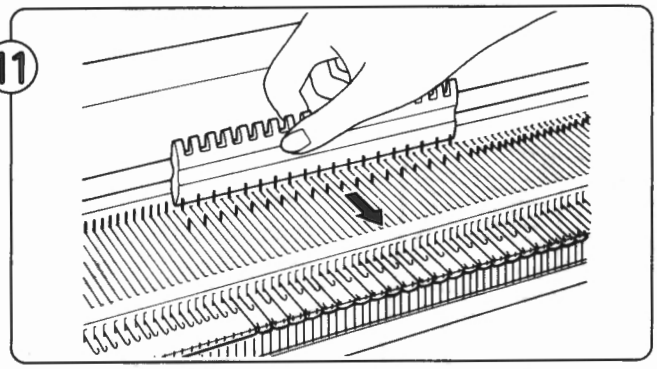
① Take the Cast-on Comb out of the Case and choose the length according to the number of needles.
② Hold the Cast-on Comb as shown with the hooks facing the machine.



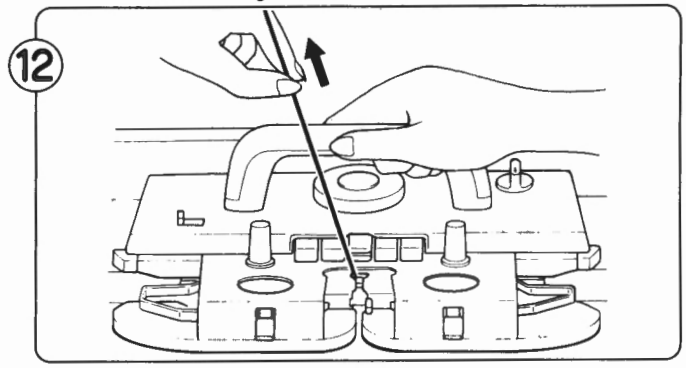
Pull the yarn through the hook towards you as illustrated.



Hook the Cast-on Comb over the loops and let it hang down. Give the Comb a gentle pull downwards. Hook the loose yarn end under the Yarn Clip on the front of the Connecting Plate.

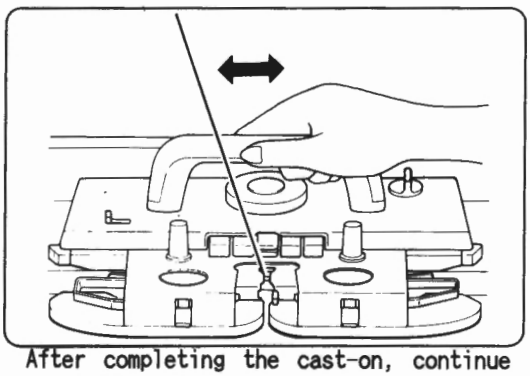


Bring forward the needles, which you took back to A position in step ④, to B position.



Move the K-Carriage to the right, holding the yarn as shown so that no loops are formed.

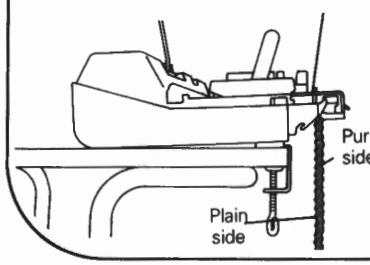
STOCKING STITCH



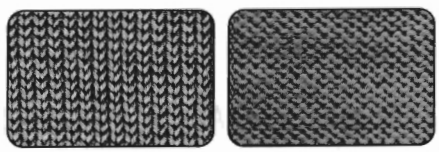
After completing the cast-on, continue moving the K-Carriage back and forth. This type of knitting is called "Stocking Stitch".

Plain & Purl Sides of your Knitting

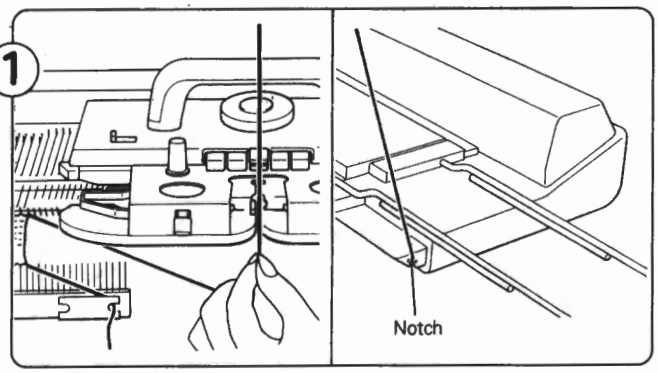
・You can use whichever side(face) you prefer as the right side when you sew up your garment.



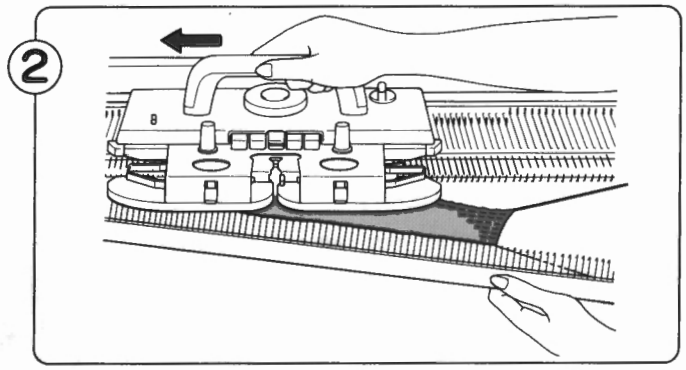
・Plain side ・Purl side



HOW TO REMOVE YOUR KNITTING FROM THE MACHINE



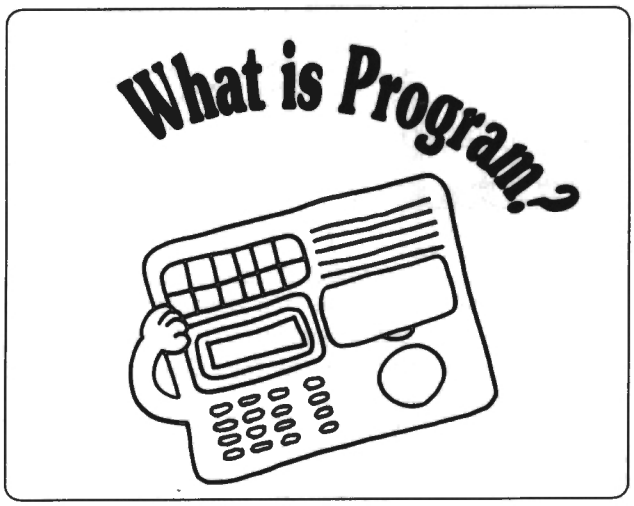
Remove the Claw Weights. Take the yarn out the Yarn Feeder A and hook it around the notch at the end of your machine.



To release the knitting, move the K-Carriage (without yarn) slowly across the needles, whilst supporting the knitting by hand.

☆ As the knitting has not been finished off and the stitches are open loops,it will unravel easily.

WHAT IS PROGRAM?

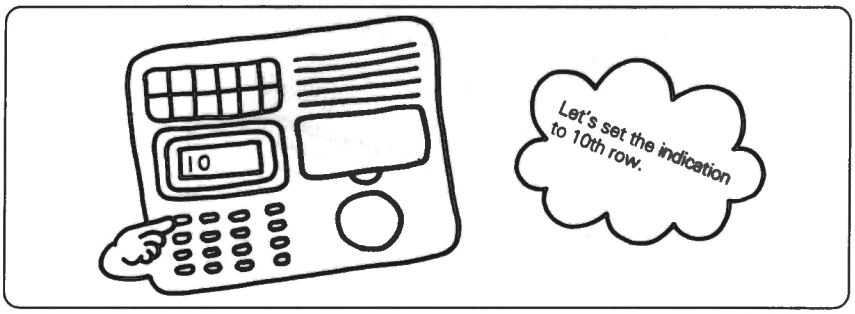


☆PROGRAM means telling the computer what functions you want the knitting machine to perform.

Built into the computer memory are 665 different stitch pattern designs, so in order to knit one of them, you must tell the computer.
Should you want to design your own stitch pattern, you must store this in the memory of the computer.
Also, if you store your garment shape in the computer, the computer shows you the numbers of stitches and rows for shaping.
Take time to learn the functions of the computer and you will enjoy your knitting machine to the full.

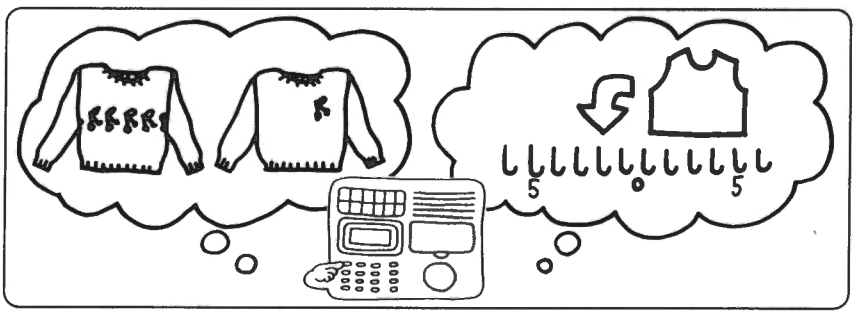
【ROW COUNTER SET-UP PROGRAM】

You can set up the row counter indication to a specific number.



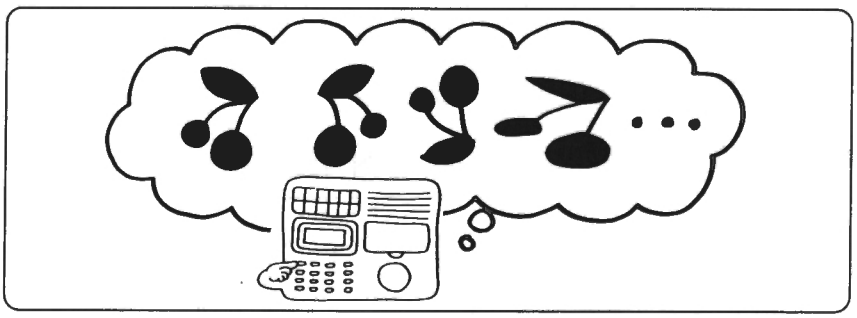
【POSITIONING PROGRAM】

When you want to knit a particular stitch pattern, you must enter this information by using PATTERN POSITION INPUT.
When you want to knit a garment, you must enter this information by using GARMENT POSITION INPUT.



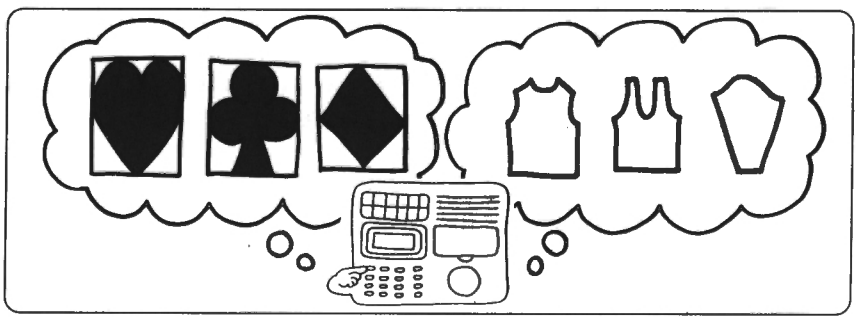
【PATTERN VARIATION PROGRAM】

You can alter the pattern in various ways. It is possible to use more than one variation at a time. See page 28.

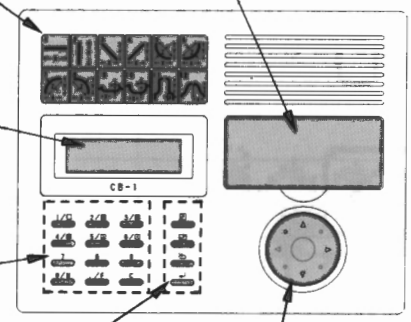


【DESIGNING PROGRAM】

When you want to enter your own stitch pattern design and to draw your garment diagram, use this DESIGNING PROGRAM.



HOW TO USE THE CONTROL BOX (CB-1)



●Cartridge Slot
Used to set up the optional cartridges.

●FB Connector
Used to connect to the optional FB-100 disc drive.

●Line List
Displays lines for drawing your own garment shape.

●AC Adapter Jack
Used to connect to the AC Adapter.

●LCD Display
Displays information of knitting, programs and so on.

●Power Switch
Turns the machine ON and OFF.
NOTE: Do not connect/disconnect any time with the Power Switch ON.

●Keys
Use these Keys to enter/erase numbers and memo information.

●Brightness Controller
Controls the Display brightness.

●Function Keys
Used to activate four functions of the machine.

●Direction Key
Used for selecting the icons and moving the cursor on the pattern creating screen.

●KM Cord Connector
Used to connect to the KM Cord of the knitting machine.

《KEY FUNCTION》

●Keys

[1/□]–[6/▣] Keys : Numeral Keys/Stitch Keys
- Used for entering the numbers 1-6.
- Also used for drawing your own pattern with [1/□]–[6/▣] on the pattern creating screen.
- [1/□], [2/■] Keys: Also used to switch variations ON and OFF.

[7]–[9] Keys : Numeral Keys
- Used for entering the numbers 7-9.

[0/N] Key : Numeral Key/Memo Key
- Used for entering the number 0.
- Used for inputting the memo data of N (normal lace).

[./F] Key : Decimal Key/Memo Key
- Used for entering the decimal point.
- Used for inputting the memo data of F (fine lace).

[C] Key : Clear Key
- Used for clearing the number and so on. You have just entered if the [↵] key has not been pressed.

●Function Keys

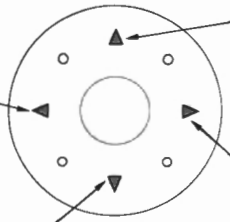
[▤] Key : Advice Key
- Explains the state shown on the Display, with text.

[◪] Key : Screen Change Key
- Used for changing the screen to reduced/enlarged pattern and garment.

[↩] Key : Main Menu Key
- Used for returning to the main menu screen.

[↵] Key : Step Key
- Used for proceeding the program.

●Direction Key



△Key : Up Key
Used for moving up the cursor.

◁ Key : Left Key
Used for moving the cursor to the left.

▷Key : Right Key
Used for moving the cursor to the right.

▽Key : Down Key
Used for moving down the cursor.

SCREEN MESSAGE ON THE DISPLAY

When you turn on the power switch of the CB-1, " " mark appears for a few seconds. After a slight delay the following screen appears in the Display.

●SCREEN OF MAIN MENU

This screen is for selecting the program in the computer. The title indicates each step in the program.

WHAT IS "ICON"?

We call pictures and letters in the frames of dotted line "icon". Icons represent functions in the program. For example, the icon of represents ROW COUNTER SET-UP PROGRAM. You can see other icons by moving the screen with the Direction key.

〈Ex.〉 (POSITIONING)——→ POSITION, PATTERN, GARMENT

(GARMENT CREATION)——→ GARMENT, CREATION

(PATTERN DELETION)——→ PATTERN, DELETION

· HOW TO SELECT THE ICON

We will call the frame of solid line "selection cursor". When the selection cursor is on an icon, you can select it. Move the selection cursor by pushing the Direction key, and push ↵ key to select your program.

· WHEN THERE ARE MORE ICONS IN THE PROGRAM

When an arrow is next to an icon, move the screen by pushing the Direction key. You will see other icons in the program.

●NUMBER SET-UP SCREEN <Ex. ROW COUNTER SET UP PROGRAM>

This screen is for entering specific numbers in the computer.

· ICON AT LEFT CORNER

The icon which you have selected is shown at the top left. In this case, you have selected (ROW COUNTER SET-UP).

· WHEN "?" APPEARS ON THE SCREEN...

Enter the number by using the Numeral and Decimal keys. Then, push ↵ key. When you enter the memo information, use the Numeral and "N" or "F" keys.

· HOW TO ENTER NUMBERS

Even if a number is on the screen, enter a new number without deleting previous one. If you have entered the wrong number, push the "C" key to clear it and enter the correct number.

●SCREEN OF KNITTING PROGRAM

There are two kinds of screens in the knitting program.

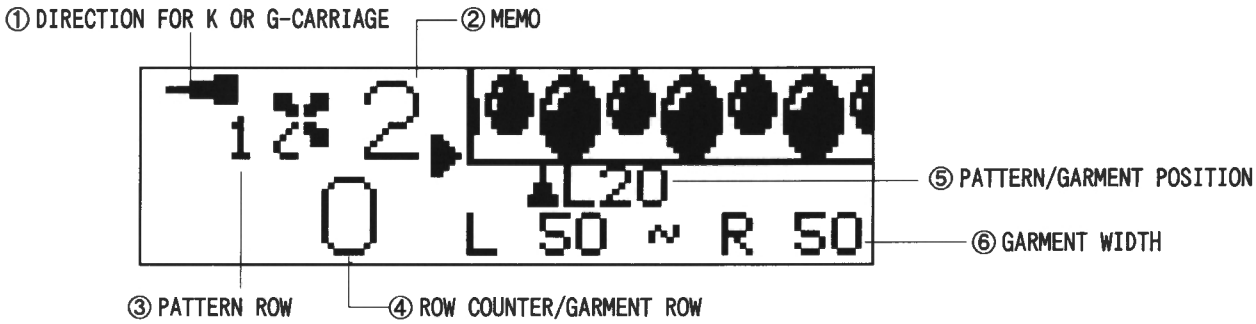
1. KNITTING SCREEN

After selecting (KNITTING) in the main menu, the knitting screen appears on the Display. This screen shows necessary information during knitting.

※Every time Carriage is moved, the row counter, pattern and garment row, pattern/garment data advance one row.

NOTE

Indications on the knitting screen differ depending on the program you have entered.



① DIRECTION INDICATION FOR K OR G-CARRIAGE " ◄■ "

When the Change Knob is set at KC(I) or (II), the carriage direction appears at the left upper corner of the screen. When the K-Carriage has passed across the Row Counter Trigger, the indication changes from ◄■ to ■►.

② MEMO INDICATION " 2 "

This indication shows when you need to change yarns etc. See page 44, for how to enter memo information.

③ PATTERN ROW " 1 2 "

This indication shows which row in pattern is to be knitted.

When you want to start from a specified pattern row, see page 19.

④ ROW COUNTER/GARMENT ROW " 0 "

This shows the number of rows already knitted.

See page 19 for the set-up of the row counter.

See page 20 for the set-up the garment row.

⑤ PATTERN/GARMENT POSITION INDICATION " ▲L20 "

You may not see the whole pattern or garment at one time. This number shows where the pattern/garment is positioned on the Needlebed.

▐► and ◄▌ indicates L100 and R100 on the Needlebed.

⑥ GARMENT WIDTH INDICATION " L 50 ~ R 50 "

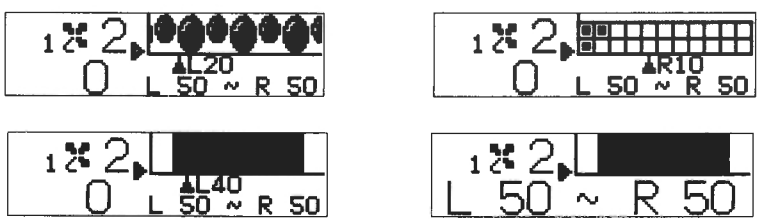
These numbers show the garment width which you have positioned, by needle numbers. Following these needle numbers, increase or decrease stitches for shaping.

INDICATIONS ON KNITTING SCREEN

You can change the indication for the knitting screen by pushing the Screen Change key. There are four screens to show the pattern data or the garment data.

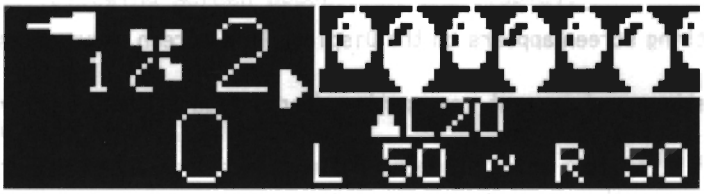
You can change the visible screen area from the needle number L100 to R100 by pushing the Direction key.

〈Ex.〉



2. STOP SCREEN (in reverse colour)

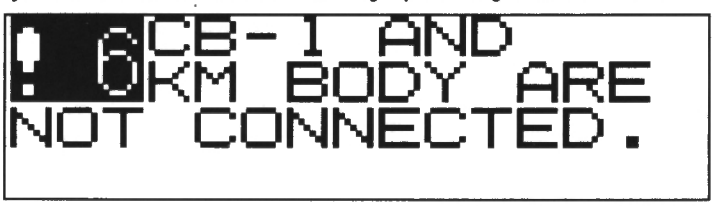
This screen is used to lock the row when you start knitting, knit separately or correct the row.
※Even if the Carriage moves across the Needlebed, the numbers of the pattern/garment row or row counter will not advance.



・FOR CHECKING PATTERN DATA/GARMENT DATA
While the stop screen appears, you can move up or down the screen by pushing the Direction key to check your pattern or garment.
After checking it, push the "0" and ▽ Down key at the same time to return to the start position.
※Do not move up or down the screen while you are knitting.

●ERROR MESSAGE SCREEN

If you have made a mistake during operating the CB-1 or Carriage, the error message will appear on the Display.



・ERROR MESSAGE NUMBER " ! 6 "
Each error message has a number. See page 108-112 for explanations.
To delete the error message from the screen, push ↵ key.

●When entering the program, please bear the following points in mind.

・If you have selected the wrong icon by mistake, push the ↩ Main Menu key to return to the main menu. Then, start again.

・If you are unsure of the meaning of an icon, push the 📄 Advice key. The advice screen explains the state shown on the Display. Push 📄 key once again, and the previous screen appears.

・If you enter the wrong number by mistake...
If you have not pushed ↵ key, push the "C" key to clear the number on the Display and enter the correct number.
If you have pushed ↵ key, push the ↩ Main Menu key. Then, start again.
※Always make sure that the number is correct and then push ↵ key.

・If you operate the machine improperly or enter the wrong data, the error message will appear on the Display. After confirming the message, push ↵ key. Then, continue your work.

・When " ☕ " mark appears during the program, the computer is calculating. Please wait for a while.

HOW TO OPERATE THE ROW COUNTER

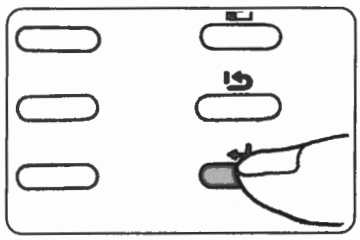
When you wish to use the CB-1 as a row counter, follow the instructions below.

● HOW TO SET THE ROW COUNTER INDICATOR

① Set up the CB-1 onto the machine, referring to page 3.

② Turn on the Power Switch, and the main menu appears on the Display.

③ Select (KNITTING), and push ↵ key.



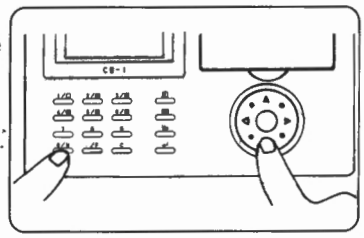
④ The knitting screen appears. Number at lower left side appears.

⑤ Every time the Row Counter Tripper on the K-Carriage pushes the Row Counter Trigger, the row number advances row by row.

NOTE: Do not stop or remove the K-Carriage while the Row Counter Tripper touches at the Trigger.

●HOW TO CHANGE THE ROW COUNTER INDICATION

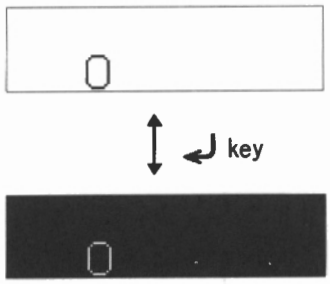
· Push the "0" key and the ▽ Down key at the same time.



· When you wish to set the row counter indication to a specific number...
Select (ROW COUNTER SET-UP), referring to page 19.

●HOW TO LOCK THE ROW COUNTER INDICATION

When you want to lock the row counter...
Push ↵ key, and the stop screen (in reverse colour) appears. While the stop screen is on the Display, the row counter does not advance. Push ↵ key once again, and the knitting screen reappears.

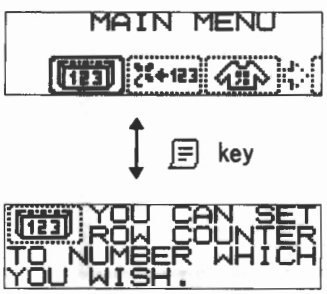


NOTE: If a garment has been positioned with (GARMENT POSITION INPUT), the indication is different from the above screen. It is called GARMENT ROW INDICATION.

HOW TO OPERATE THE ADVICE KEY

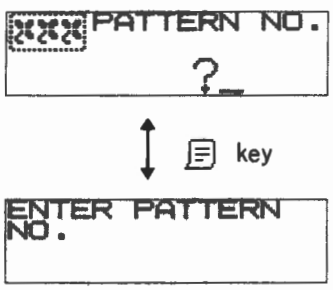
If you are uncertain of the meanings of icons or screens, push the Advice key. The advice screen will give explanations.

· When the screen for selecting the icon appears on the Display...



Place the selecting cursor on the icon which you are unsure of, and push the Advice key.
The advice screen explains the meaning of the icon.
Push the Advice key again, and the previous screen appears.

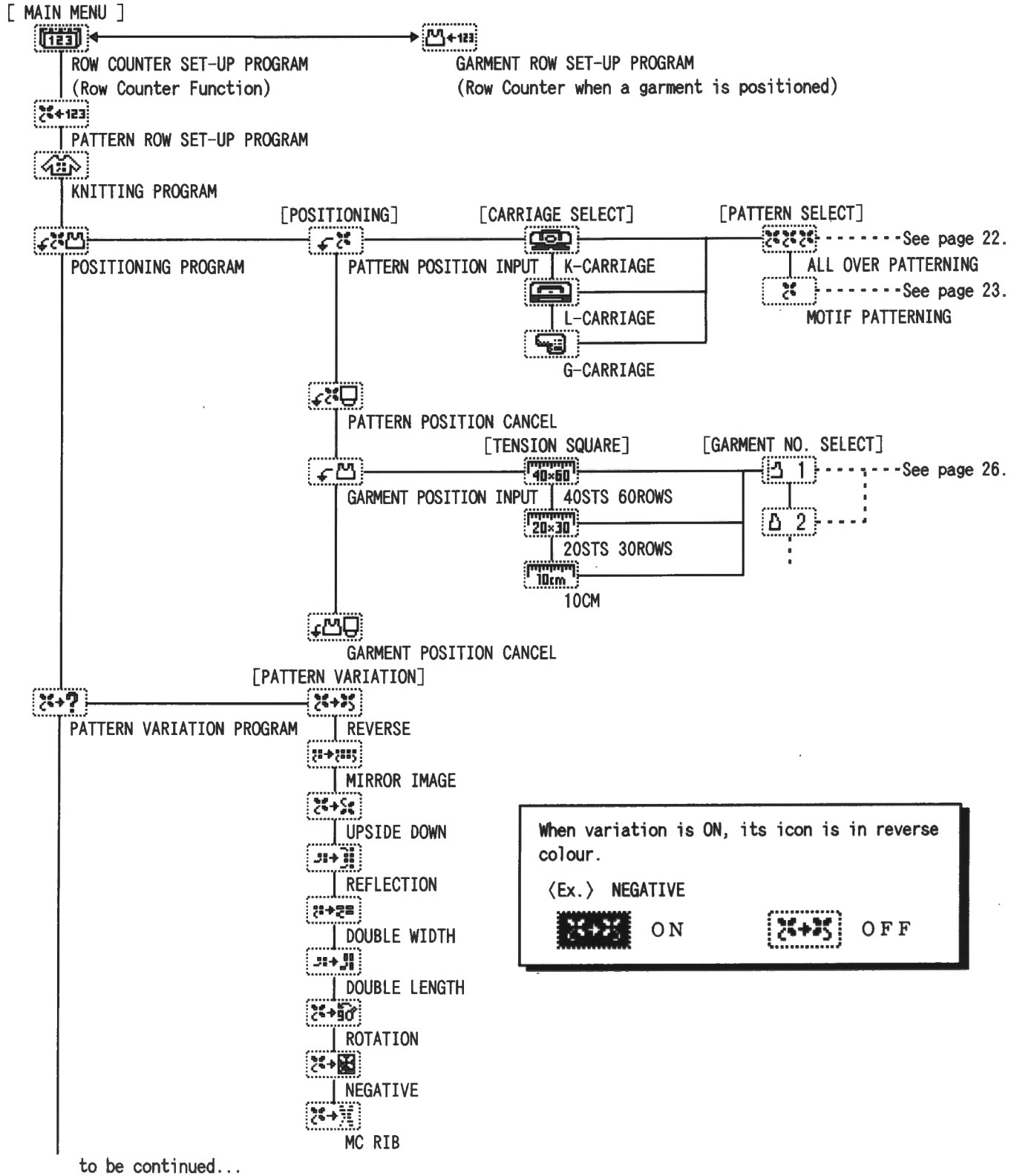
· When other screen appears on the Display...



Push the Advice key, and the advice screen explains its meaning. Push the Advice key again, and the previous screen appears.

PROGRAM OUTLINE

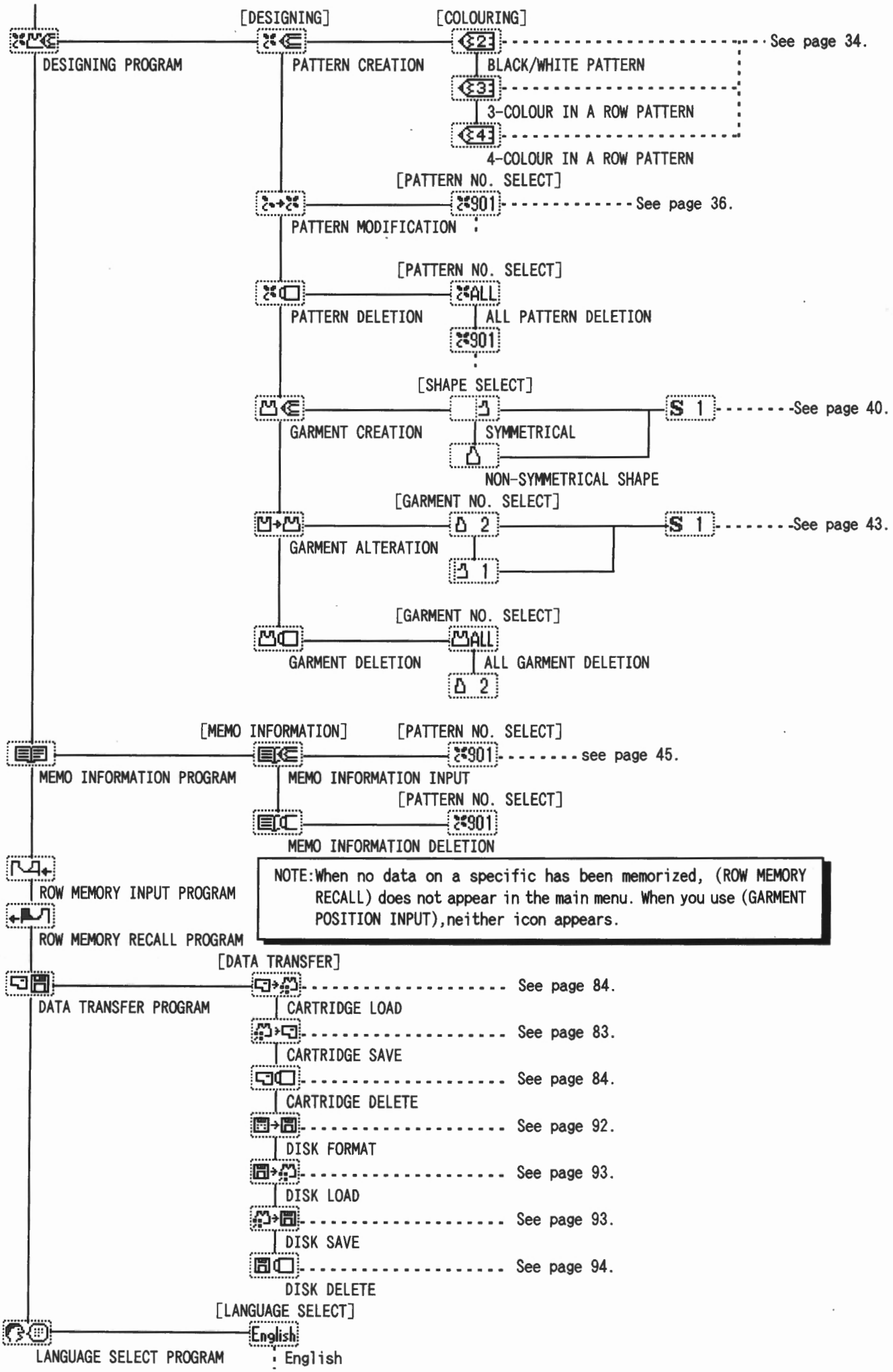
- The following chart is a flow chart of the programs, with simple pictures "icons".
- The leftmost icons in the chart automatically appear on the Display when you turn the switch on. These icons belong to the main menu.
  By pushing the Main Menu key, the screen returns to the main menu.
- After selecting the icon, the program proceeds to the right in the chart. So, you can finish your selected program. Then, the main menu automatically reappears.
- Also, you can select icons on the vertical line, with the Direction key.



When variation is ON, its icon is in reverse colour.

〈Ex.〉 NEGATIVE

ON OFF


[DESIGNING]
[COLOURING]
DESIGNING PROGRAM
PATTERN CREATION
BLACK/WHITE PATTERN
See page 34.
3-COLOUR IN A ROW PATTERN
4-COLOUR IN A ROW PATTERN
[PATTERN NO. SELECT]
901
See page 36.
PATTERN MODIFICATION
[PATTERN NO. SELECT]
ALL
PATTERN DELETION
ALL PATTERN DELETION
901
[SHAPE SELECT]
S 1
See page 40.
GARMENT CREATION
SYMMETRICAL
NON-SYMMETRICAL SHAPE
[GARMENT NO. SELECT]
2
S 1
See page 43.
GARMENT ALTERATION
1
[GARMENT NO. SELECT]
ALL
GARMENT DELETION
ALL GARMENT DELETION
2
[MEMO INFORMATION]
[PATTERN NO. SELECT]
901
see page 45.
MEMO INFORMATION PROGRAM
MEMO INFORMATION INPUT
[PATTERN NO. SELECT]
901
MEMO INFORMATION DELETION
ROW MEMORY INPUT PROGRAM
ROW MEMORY RECALL PROGRAM
NOTE:When no data on a specific has been memorized, (ROW MEMORY RECALL) does not appear in the main menu. When you use (GARMENT POSITION INPUT),neither icon appears.
[DATA TRANSFER]
DATA TRANSFER PROGRAM
See page 84.
CARTRIDGE LOAD
See page 83.
CARTRIDGE SAVE
See page 84.
CARTRIDGE DELETE
See page 92.
DISK FORMAT
See page 93.
DISK LOAD
See page 93.
DISK SAVE
See page 94.
DISK DELETE
[LANGUAGE SELECT]
English
LANGUAGE SELECT PROGRAM
: English

MAIN MENU 【ROW COUNTER SET-UP PROGRAM】

This program is used to set the row counter indication to the number you want. You can enter a number in four figures. When you want to use the CB-1 as a row counter, select (KNITTING). (See page 20.)

●NOTE

※If a garment has been positioned, (ROW COUNTER SET-UP) does not appear in the main menu. Instead (GARMENT ROW NO. SET-UP) appears in the main menu.

●How to program

① Select (ROW COUNTER SET-UP) in the main menu, and push ↵ key.

<Ex.> Enter 20.

② Enter the row number which you want to change. Push ↵ key, and the main menu appears on the Display.

NOTE: If you entered the wrong number, push the C (Clear) key. Then, enter the correct number.

MAIN MENU 【GARMENT ROW NO. SET-UP PROGRAM】

This program is used to set the row number in a positioned garment.
When you position a new garment, its row number is automatically set to 0.

●NOTE

※If you entered a larger row number than the top row number in garment, the error message appears on the Display. Push ↵ key to clear the error message, and enter a smaller row number than one in the error message.

●How to program

① Select (GARMENT ROW NO. SET-UP) in the main menu, and push ↵ key.

<Ex.> Enter 20.

② Enter the row number where you want to change. Push ↵ key, and the main menu appears on the Display.

NOTE: If you entered the wrong number, push the C (Clear) key. Then, enter the correct number.
The number which you enter indicates the row number which has been knitted.

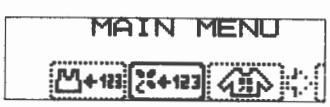
MAIN MENU 【PATTERN ROW NO. SET-UP PROGRAM】

This program is used to set the row number where you wish to start knitting in positioned pattern repeat.
When you position a new pattern, its row number is automatically set to 1.
※When the variation (UPSIDE DOWN) is turned on, the last row number (top) of a positioned pattern appears on the Display.

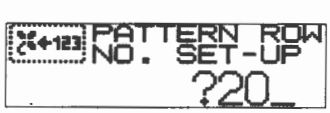
●NOTE

※If you entered a larger row number than one in pattern, the error message appears on the Display. Push ↵ key to clear the error message, and enter a smaller row number than one in the error message.

●How to program



① Select (PATTERN ROW NO. SET-UP) in the main menu, and push ↵ key.



<Ex.> Enter 20.

② Enter the row number where you want to start. Push ↵ key, and the main menu appears on the Display.

NOTE: If you entered a wrong number, push the C (Clear) key. Then, enter a correct number.

MAIN MENU

【KNITTING PROGRAM】

This program is used to load the knitting screen with necessary information such as row numbers and pattern/garment, onto the Display. (The information on the knitting screen differs depending on the program you have selected. See page 14.) Before you start to knit, always select (KNITTING).

- You can see the reduced/enlarged pattern or the garment diagram on the Display by pushing the Screen Change key.
- There are two kinds of screens, the knitting screen and the stop (in reverse colour) screen. You can change it alternatively by pushing the ↵ key.
- By pushing the "0" and the ▽ Down keys at the same time, you can set the number of the row counter (or garment row) to "0" and the number of the pattern row to "1". We will call this "start position".
  ※When the variation (UPSIDE DOWN) is turned on, the last row number of a positioned pattern appears on the Display.
- When you want to view the pattern or garment diagram before knitting...
  Push the Direction key while the stop screen appears on the Display. If the CB-1 and the machine are disconnected, the error message will appear. Then, push ↵ key to clear the error message. Again push ↵ key, and you can move up or down the screen with the △ Up or ▽ Down key. After checking the pattern or garment diagram, push the "0" and the ▽ Down keys at the same time to return the start position.

●NOTE

※If you change to the stop screen during knitting, place the Carriage outside the Position Sensor and move it across the Position Sensor. Then, continue knitting after changing to the knitting screen.

※If you knit when the stop screen is showing, the rows of pattern or the garment do not advance. If you continue knitting in the stop screen by mistake, unravel the rows and continue knitting in the knitting screen.

※If you change the stop screen to the knitting screen, be sure that the Carriage is placed outside the Position Sensor.

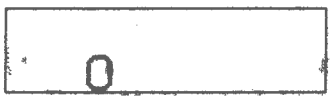
※If you happen to operate incorrectly, inappropriate pattern or garment row might appear. In this case, follow the step of supplementary sheet or Useful Hints from page 95. If you use the G-Carriage, see page 87.

●HOW TO PROGRAM

① Select(KNITTING) in the main menu, and push ↵ key.

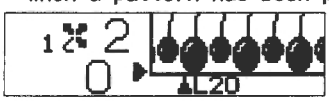
② The following screens appear on the Display.

・When a pattern or garment has not been positioned,



Only indication for the row counter appears on the Display.

・When a pattern has been positioned,



The indications for the row counter, pattern row, pattern data, memo information appear on the Display.

・When a garment has been positioned,

The indications for the garment row, needle numbers of garment width, garment data appear on the Display.

・When a pattern and garment have been positioned,

The indications for the pattern and garment rows, memo information, needle numbers of garment width, and pattern or garment data appear on the Display.

※You can change the screen to the pattern data from garment data by pushing the Screen Change key.

※The garment shape on the screen is for your guideline. Always follow the indication for garment width.

※The computer makes the sound "beep" at the row a line changes.

《WHEN "KNIT ONE SIDE" APPEARS DURING KNITTING - Neckline shaping》

The screen of "KNIT ONE SIDE" automatically appears when you need to knit each side of the garment separately which you have positioned. See HOW TO SHAPE A NECKLINE on page 72.

●NOTE

※ When you knit Lace/Fine lace patterns or patterns with your colour changer for single/double bed, the computer decides which side to knit first. Always follow each Step of the PATTERN KNITTING in this manual.

MAIN MENU

【POSITIONING PROGRAM】

This program is used to enter or delete the data to knit a pattern or garment. There are four programs in the sub menu as shown below:

《PATTERN POSITION INPUT》
This is used to enter built-in patterns or your own patterns wherever you wish to knit them on the Needlebed.

《PATTERN POSITION CANCEL》
This is used to cancel (PATTERN POSITION INPUT) you have entered.

《GARMENT POSITION INPUT》
This is used to enter your garment diagram wherever you want to knit it on the Needlebed.

《GARMENT POSITION CANCEL》
This is used to cancel (GARMENT POSITION INPUT) you have entered.

●NOTE
※When you want to position your own pattern or garment... First create a pattern or garment diagram in DESIGNING PROGRAM.

●HOW TO PROGRAM

① Select (POSITIONING) in the main menu, and push ↵ key.

② Select the icon which you want to use from the screen.

《PATTERN POSITION INPUT》

This is used to set the Carriage you want to use, the pattern number you want to knit and the position where you decide to knit the pattern. (The following example is worked using "STITCH WORLD III" Fairisle Pattern No.99 and No.105.)

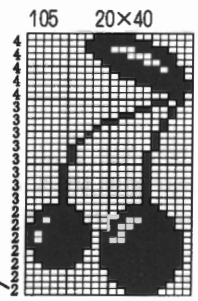
●PATTERN NUMBER
There are two kinds of patterns, built-in patterns printed in "STITCH WORLD III" and your own patterns.

※Built-in patterns from "STITCH WORLD III" : 1-665
See the back pages in the STITCH WORLD III for details.

<Ex.> Pattern No.105

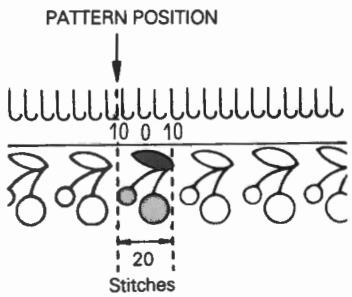
Stitches Rows
105 20 × 40
Pattern Number

The number of contrast yarn is shown in the memo on the Display.

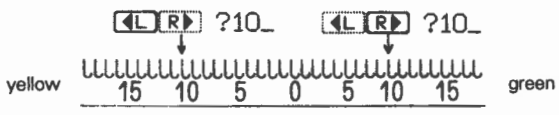


※For creating your own designs (See page 34) :
901-(998) pattern number for your own designs is allocated by the computer. Keep careful records to avoid confusion.

●FIRST NEEDLE POSITION ON PATTERN
What is the First Needle Position...
First of all we need to understand how a pattern is positioned on the knitting. The left end stitch of the selected pattern is the one we need to identify. When the pattern is knitted each stitch has its own needle. The needle which corresponds with this first stitch of the pattern repeat is called the First Needle Position.(F.N.Position).



NOTE:Needle positions
Needles to the left of the Needlebed are represented by Left(Yellow) to the right by Right(Green).



This is so that the computer can distinguish between two needles of the same number. For example No.10 on the Right and Left.

●NOTE

※How to begin pattern knitting after knitting in stocking stitch...

Enter the data of (PATTERN POSITION INPUT) according to the patterns as shown below:

Patterns for K-Carriage	Two rows before you want to pattern knit
Patterns for L-Carriage	The row you want to pattern knit
Patterns for G-Carriage	One row before you want to pattern knit

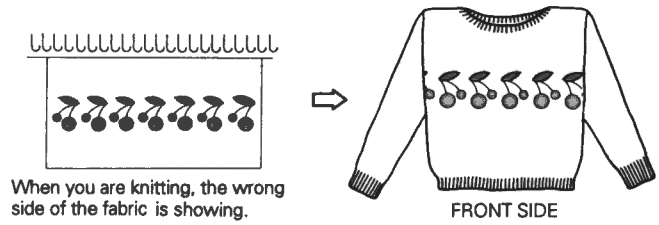
<Ex.>When you want to begin pattern knitting from 40th row of garment with K-Carriage...

Enter the program when the number of row counter or garment row "38" appears on the Display.

※When you want to vary the pattern...

Before you position the pattern, turn on any of the pattern variations.

※ Remember that the pattern direction or position is different when you view it from the plain side and purl side.



When you are knitting, the wrong side of the fabric is showing.

FRONT SIDE

●HOW TO PROGRAM

① Select (POSITIONING) in the main menu, and push ↵ key.

② Select (PATTERN POSITION INPUT), and push ↵ key.

<Ex.> Select .

③ Select the icon of the Carriage which you are going to use, and push ↵ key.

: K-Carriage

: L-Carriage

: G-Carriage

④ Select (ALL OVER PATTERNING) or (MOTIF PATTERNING), and push ↵ key.

〈ALL OVER PATTERNING〉 :

The pattern repeat is placed over the Needlebed.

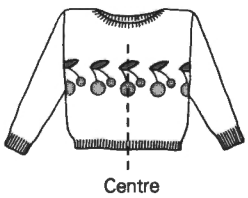
〈MOTIF PATTERNING〉 :

A motif can consist of one pattern repeat or several repeats of the same pattern. However, you can program up to 9 different patterns in the same row.

〈ALL OVER PATTERNING〉

The pattern repeat is placed over the Needlebed.

<Ex.>Pattern No.105 is placed over the centre of the Needlebed.



Centre

●HOW TO PROGRAM

① Follow the above Steps ① - ③ of PATTERN POSITION INPUT.

② Select (ALL OVER PATTERNING), and push ↵ key.

<Ex.> Enter 105.

③ Enter the pattern number which you are going to knit with the Numeral keys, and push ↵ key.

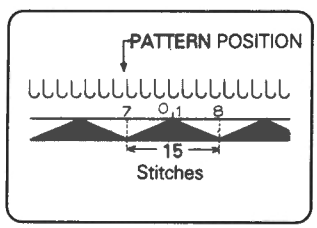
※If the same pattern number appears on the Display, enter the number again as the new pattern number.

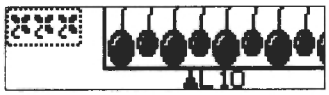
<Ex.>Push ↵ key.

④ Enter the pattern position. The Display shows you where the pattern repeat is placed over the centre of the Needlebed automatically. If you choose this position, push ↵ key.

※If you want to change its position and move it to either the right or the left, select (L) or (R) with the Left or Right key and then enter the number of the new First Needle Position.

※When one pattern repeat consists of an odd number of stitches, the centre needle is automatically placed on R1. (Pattern repeats in Motif No.1 are automatically centred as in all over patterning but they can be moved.)



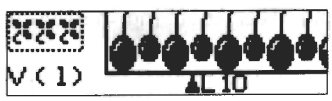


<Ex.> Push ↵ key.

⑤ Pattern data appears on the Display.
(By pushing ◪ key, the screen changes to the pattern diagram.)
After checking the pattern position, push ↵ key. Then, the main menu reappears.

※You cannot see the whole pattern at one time. So, you can use the Left or Right key to move the screen sideways. But, the screen cannot be moved vertically.

※The ▮▶, ◀▮ mark means L100 and R100 of the needle.



When "V" appears in the screen of Step ⑤ ...

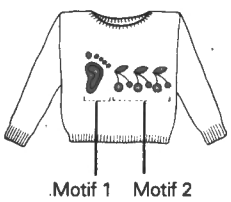
The computer is telling you one or more pattern variations are ON.
Number in the brackets shows how many icons are ON.
Please check it by selecting (PATTERN VARIATION).
"V" appears in either screen of All over or Motif patterning when any of (PATTERN VARIATION) is turned on.

〈MOTIF PATTERNING〉

You can program a max of 9 areas on the knitting, with different patterns for each area.

<Ex.>
1 repeat of Pattern No.99 is placed from R20.
3 repeats of Pattern No.105 is placed from L60.

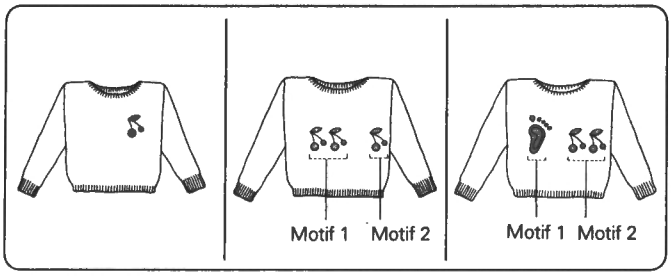
(例)



●What is "Motif"?

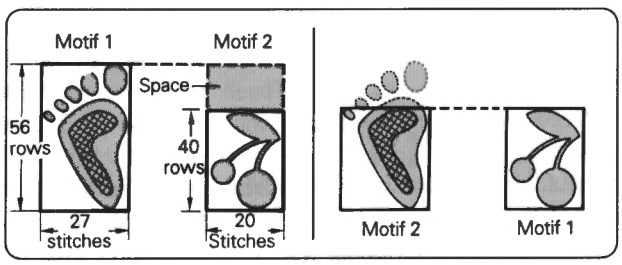
・A motif can consists of one pattern repeat or several repeats of the same pattern. The motifs are numbered according to the order in which you enter them, i.e. first, second, third, etc.
(MOTIF 1) shows the motif you are going to enter first.
You can enter up to (MOTIF 9).

・You can use different patterns for each area. But, you may not knit together pattern such as knitting fairisle and multi-colour skip stitch patterns.



●NOTE

※When you combine more than two different patterns, you must enter the tallest pattern as motif 1.



※Height is automatically entered the same as motif 1. The number of rows of the pattern for motif 2-9 are automatically set to the same as that of motif 1.

※If you want to view how the patterns are positioned... You can move the screen with the Direction key while the stop screen appears.

※You cannot knit "STITCH WORLD III" Pattern No.484-498 as motifs.

※There is a possibility you cannot knit your own pattern or pattern No.479-483, if you combine three/four colours in a row patterns.

※The memo information is automatically entered the same as motif 1 if you combine patterns.

●HOW TO PROGRAM

① Follow the Steps ① - ③ of PATTERN POSITION INPUT on page 22.

② Select (MOTIF), and push ↵ key.

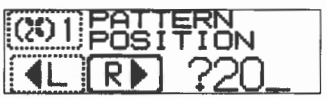
③ Select (MOTIF 1), and push ↵ key.

<Ex.> Enter 99.

④ Enter the pattern number which you are going to knit in first motif with the Numeral keys, and push ↵ key.

<Ex.> Enter 1.

⑤ Enter the number of pattern repeats in the first motif with the Numeral keys, and push ↵ key.



<Ex.>Select R▶, and enter 20.

⑥ Enter the pattern position for the first motif.
The Display shows you where the pattern repeat is placed over the centre of the Needlebed automatically.
If you choose this position, push ↵ key.

If you want to change its position and move it to either the right or the left, select (L) or (R) with the Left or Right key and then enter the number of the new First Needle Position.

⑦ Pattern data appears on the Display.
After checking the pattern position, push ↵ key.

<Ex.>Select (25)2, and push ↵ key.

⑧(MOTIF 1),(END), and (MOTIF 2) appear on the Display.
· If you want to finish the program, select (END).
· If you want to continue the program, select (MOTIF 2).
· If you want to change the data for motif 1, select (MOTIF 1).
Then, push ↵ key.

<Ex.> Enter 105.

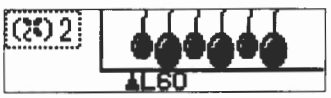
⑨ Enter the pattern number which you are going to knit in the second motif with the Numeral keys, and push ↵ key.

<Ex.> Enter 3.

⑩ Enter the number of pattern repeats in the second motif with the Numeral keys, and push ↵ key.

<Ex.>Select ◀L, and enter 60.

⑪ Enter the pattern position for the second motif.
Select (L) or (R) with the Left or Right key and then enter the number of the First Needle Position.



⑫ Pattern data appears on the Display. After checking the pattern position, push ↵ key.

<Ex.>Select END, and push ↵ key.
The program has been finished, and the main menu appears.

⑬(MOTIF 1),(MOTIF 2), (END), and the "✣" arrow mark appear on the Display.
· If you want to finish the program, select (END).
· If you want to continue the program, push the Right key and select (MOTIF 3).
· If you want to change the data for motif 1 or 2, select (MOTIF 1) or (MOTIF 2).
Then, push ↵ key.

☆If you select the former motif number and change the pattern number, the entered following data will be deleted.
☆You can program patterns in Motif No. up to 9.
When you select (END),the main menu appears on the Display.

《PATTERN POSITION CANCEL》

This is used to cancel the program of PATTERN POSITION INPUT which you have entered in the computer.

●NOTE

※If you want to knit your garment in stocking stitch, delete the positioned pattern with (PATTERN POSITION CANCEL).

●HOW TO PROGRAM

① Select (POSITIONING) in the main menu, and push ↵ key.

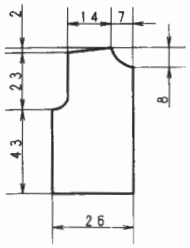
② Select (PATTERN POSITION CANCEL), and push ↵ key.

③ If you want to delete the positioned pattern...
Select (OK), and push ↵ key. The main menu appears.
If you wish to keep the positioned pattern...
Select (×), and push ↵ key. The screen at Step ② reappears.

《GARMENT POSITION INPUT》

This is used to position your garment diagram on the Needlebed.

<Ex.>Enter the right diagram as Garment No.1 in (GARMENT CREATION).
Garment No 1,
Non-symmetrical shape
TENSION SQUARE:
40 stitches x 60 rows
15.6 cm 18.3 cm



●NOTE

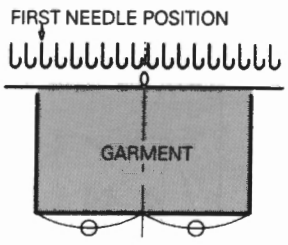
※Before you select (GARMENT POSITION INPUT), make a tension square with the pattern which you are going to knit. (See page 71.)

●GARMENT NUMBER

The computer allocates the number 1 for the your first garment, the number 2 for your second garment. To avoid confusion, it is recommended to write down the number. (See page 40.)

●FIRST NEEDLE POSITION IN GARMENT

When you knit your garment, you need to enter where you knit it on the Needlebed. The left end stitch of the garment is one we need to identify. The needle which corresponds with this left stitch of the garment is called the First Needle position(F.N.position).
When you reverse the garment in the program, the left end of reversed shape is its First Needle position.



・Needles to the left of the Needlebed are represented by Left(Yellow) to the right by Right(Green).

●HOW TO PROGRAM

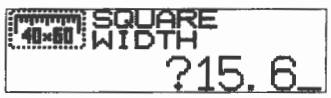
① Select (POSITIONING) in the main menu, and push ↵ key.

② Select (GARMENT POSITION INPUT), and push ↵ key.

<Ex.> Select 40×60.

③ Select the tension square which you have knitted, and push ↵ key.

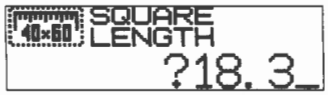
40×60 : 40 stitches x 60 rows
20×30 : 20 stitches x 30 rows
10cm : 10 cm x 10cm



<Ex.> Enter 15.6.

④ Enter the measurement of the stitches (i.e. the width), with the Numeral keys and Decimal key, and push ↵ key.
You can enter the measurement in cm to the first decimal place.

※If you have made the square in 10cm, count the number of stitches and enter it. You can enter the number to the first decimal place.



<Ex.> Enter 18.3.

⑤ Enter the measurement of the rows (i.e. the length), with the Numeral keys and Decimal key, and push ↵ key. You can enter the measurement in cm to the first decimal place.

※If you have made the square in 10cm, count the number of rows and enter it. You can enter the number to the first decimal place.

<Ex.> Select 01 .

⑥ Select the garment number, and push ↵ key.

is non-symmetrical shape.
is symmetrical shape.

<Ex.> Select .

⑦ Select (ORIGINAL) or (REVERSE), and push ↵ key.

: Garment is knitted same as you have drawn in (GARMENT CREATION).

: Garment is knitted in reverse to the way you have drawn it.

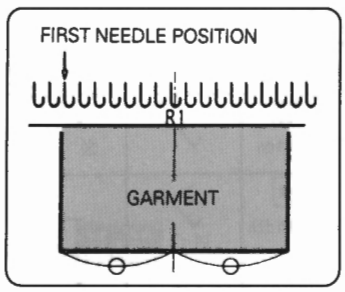
※When you select a symmetrical shape, the screen at Step ⑦ does not appear.

⑧ Enter the garment position. The Display shows you where the garment is placed over the centre of the Needlebed automatically. If you choose this position, push ↵ key.

· If you want to change its position and move it to either the right or the left, select (L) or (R) with the Left or right key and then enter the number of the new First Needle Position. Then, push ↵ key.

The main menu reappears on the Display.

※When garment consists of an odd number of stitches, the centre stitch is automatically placed on R1(Green 1).



· When you want to knit entered garment in reverse...
(1)Follow the above Steps ① - ⑥. Your previous data you have entered in the screen at Step ④ and ⑤ appears. If you use the data, push ↵ key.

(2)Select (REVERSE) in the screen at Step ⑦.

(3)Follow Step ⑧.

※If you want to check how the garment has been positioned, select (KNITTING).

《GARMENT POSITION CANCEL》

This is used to cancel the data in GARMENT POSITION INPUT you have entered.

●NOTE
※When you knit a tension square, please cancel the positioned garment with (GARMENT POSITION CANCEL).

●HOW TO PROGRAM
① Select (PO$ITIONING) in the main menu, and push ↵ key.

② Select (GARMENT POSITION CANCEL), and push ↵ key.

③ If you want to delete the positioned garment ...
Select (OK), and push ↵ key. The main menu appears.
If you want to keep the positioned garment...
Select (×), and push the ↵ key. The screen at Step ② reappears.

MAIN MENU

【PATTERN VARIATION PROGRAM】

You can have fun making lots of different pattern combinations with this program.

●LIST FOR PATTERN VARIATION

Use the appropriate Variation to knit the patterns marked " ✓ " in the columns below.

Pattern / Variation	Fairisle pattern	Tuck Stitch pattern	Skip Stitch pattern	Weaving pattern	Thread Lace pattern	Plating-Tuck Stitch pattern	Lace Fine Lace pattern	Multi-colour Skip Stitch pattern (3/4 colours)	Multi-colour Rib pattern (2 colours)	Multi-colour Rib pattern (3/4 colours)	
										No.484～498	Others
Reverse	✓	✓	✓	✓	✓	✓	✓ ※ 6	✓	✓	✓	✓
Mirror Image	✓	✓ ※ 1	✓	✓ ※ 1	✓ ※ 1	✓ ※ 1	—	✓	✓	✓	✓
Upside Down	✓	✓	✓	✓	✓	✓	—	✓	✓ ※ 4	✓	✓
Reflection	✓	✓ ※ 1	✓	✓	✓	✓	—	✓	—	—	✓
Double Width	✓	—	✓	✓ ※ 1	✓ ※ 1	—	—	✓	✓	✓	✓
Double Length	✓	✓ ※ 1	✓	✓	✓	—	—	✓	✓	—	✓
Rotation	✓	✓ ※ 1	✓ ※ 3	✓ ※ 1	✓ ※ 1	✓ ※ 1	—	—	✓	—	—
Negative	✓	— ※ 2	— ※ 2	✓ ※ 1	—	— ※ 2	—	—	✓	—	—
MC Rib	—	—	—	—	—	—	—	—	✓ ※ 5	—	✓

※1- Use the Variation according to the remark on page 35 under Tuck Stitch, Weaving, Thread Lace and Plated Tuck Stitch patterns.

※2- You can knit Tuck Stitch, Plated Tuck Stitch and Skip Stitch patterns from "STITCH WORLD III" without using the NEGATIVE.

※3- You may not be able to knit your chosen pattern if too many rows need to be skipped after the ROTATION.

※4- Do not use the UPSIDE DOWN for any pattern which changes the main yarn.

※5- Always use the MC RIB when you knit Multi-colour Rib.

※6- You may not be able to knit your chosen pattern or the transfers will be in the opposite direction.

●NOTE

※Before you position a pattern in (PATTERN POSITION INPUT), enter any chosen (PATTERN VARIATION).

※When you want to combine (ROTATION) and other variation icons, first turn on (ROTATION).

※When you knit Lace or Fine Lace pattern, you can turn on (REVERSE).
Even if the other icons are turned on, Lace or Fine Lace pattern are not affected.
However, reverse may change the look of the pattern as the transfers will be in the opposite direction.

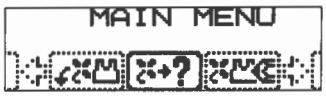
●TURNING ON/OFF PATTERN VARIATION

You can see whether each variation is ON or OFF, with the icon.

ON : The pattern is varied. (Use Numeral key "2")

OFF : The pattern is not changed. (Use Numeral key "1")

●HOW TO VARY PATTERN



① Select (PATTERN VARIATION) in the main menu, and push ↵ key.

② Select the icon which you want to use.

<Ex.>Select .

③ Push the "2" Numeral key to turn on VARIATION. The icon changes to reverse colour.

④ Follow the above Steps ② - ③ when you want to use other variations.
When you want to finish the program of VARIATION...
Push ↵ key. The main menu reappears on the Display.

●HOW TO CANCEL VARIATION

① Select (PATTERN VARIATION) in the main menu, and push ↵ key.

② Select the icon which you want to cancel.

<Ex.>Select .

③ Push the "1" Numeral key to turn off VARIATION. The icon changes to the original.

④ When you finish turning off the icon...
Push ↵ key. The main menu reappears on the Display.

☆The following examples are worked using "STITCH WORLD III" Pattern No.105 and No.99.

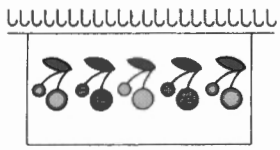
Pattern No.105

Pattern No.99

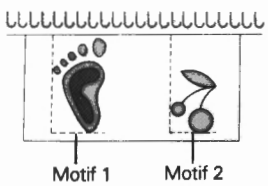
《REVERSE》

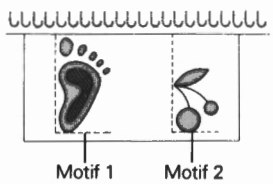
The direction of the pattern is changed.
※If you are knitting letters of "STITCH WORLD III" Pattern No.543-664, turn on (REVERSE).

●All over pattern



●Motif pattern





When the REVERSE is ON...
The pattern when knitted (as seen from the purl side) is in the opposite direction to the diagram.

●How to change the REVERSE while you are knitting in pattern...
Change the REVERSE one row before you want the pattern to be reversed.

<Ex.>When you want to reverse from 10th row...
When "9" of the pattern row and the carriage direction arrow in reverse colour appear on the Display, turn on (REVERSE).

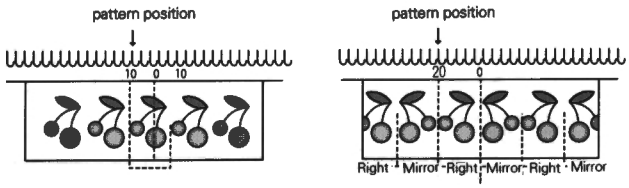
《MIRROR IMAGE》

The pattern is knitted with a mirror image.

●All over pattern

· When using the pattern position which is placed automatically by the computer...

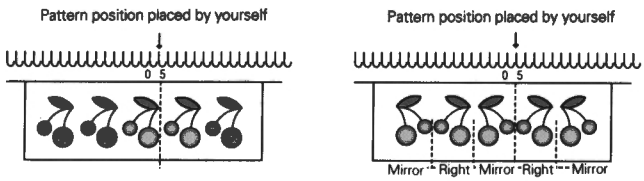
OFF ON



The computer places the foldline of the mirror image pattern at the centre of the Needlebed.

· When using a pattern position placed by yourself...

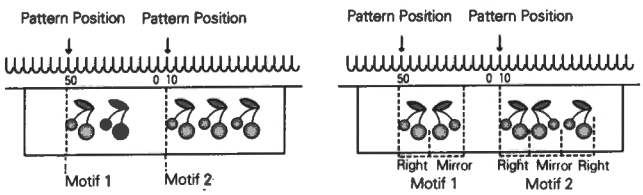
OFF ON



When the MIRROR IMAGE is ON...
The computer makes patterns alternately the "right" way and "reverse" way round from the selected pattern position, over the Needlebed.

●Motif pattern

OFF ON



When the MIRROR IMAGE is ON...
The computer makes pattern alternately the "right" way and "reverse" way round, beginning from the right of the pattern position.

●How to change the MIRROR IMAGE whilst you are knitting in pattern...
Change the MIRROR IMAGE one row before you want the pattern to be changed.

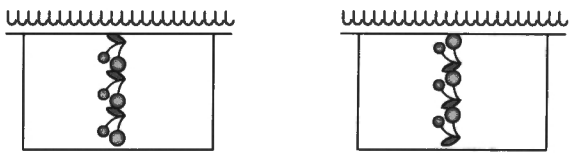
<Ex.>When you want to change the MIRROR IMAGE from the 10th row...
When "9" of the pattern row and the carriage direction arrow in reverse colour appear on the Display, turn on (MIRROR IMAGE).

※When you knit the pattern in mirror image, enter more than two pattern repeats.

《UPSIDE DOWN》

The pattern is knitted upside down.
(Knitted from the top row of the pattern.)

OFF ON



When the UPSIDE DOWN in ON...
The pattern starts at the last row (top row) of the pattern. After you have finished the program of (PATTERN POSITION INPUT), its top row appears on the Display.

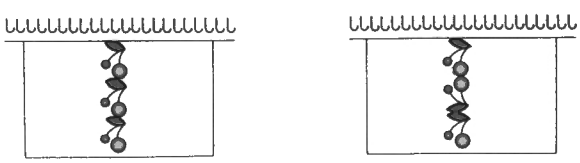
●How to change the UPSIDE DOWN whilst you are knitting in pattern...
Change the UPSIDE DOWN on the row you want the pattern to be changed.

<Ex.>When you want the pattern to be knitted upside down from 10th row...
When "10" of the pattern row and the carriage direction arrow in reverse colour appear on the Display, turn on (UPSIDE DOWN).

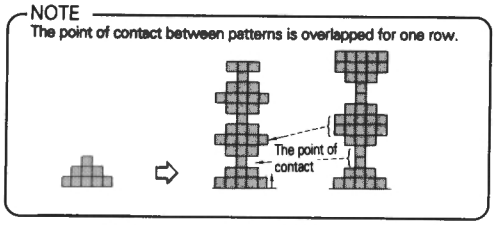
《REFLECTION》

The pattern is knitted the right way up, then upside down.

OFF ON



※The point of contact between patterns is overlapped for one row.
When you want the pattern to knit upside down first then right way up...
Enter the row number for the top of the pattern in (PATTERN ROW NO. SET-UP) after you have finished (PATTERN POSITION INPUT).



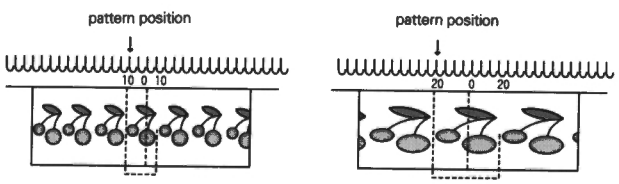
●How to change the REFLECTION whilst you are knitting in pattern...
1. OFF → ON
Turning on the REFLECTION at any row, the pattern will be knitted upside down after completing one pattern right way up.
2. ON → OFF
・Whilst knitting right way up...
You can turn off at any row.
・Whilst knitting upside down...
Change the REFLECTION on the row on which you want the pattern to be changed.

<Ex.>When you want the pattern to be knitted right way up from 10th row...
When "10" of the pattern row and carriage direction arrow in reverse colour appear on the Display, turn off (REFLECTION).

《DOUBLE WIDTH》

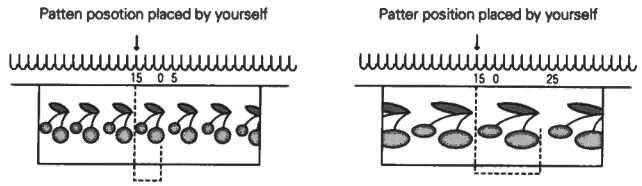
The pattern is knitted in double width.

●All over pattern
・When using the pattern position which is placed automatically by the computer...



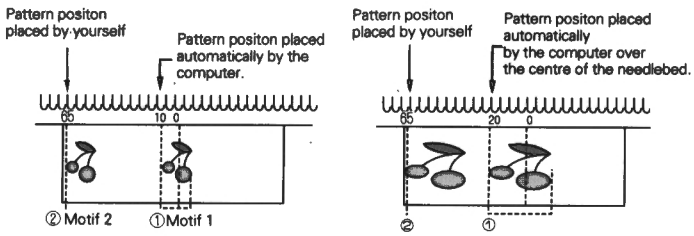
The centre of double width pattern is placed at the centre of the Needlebed.

・When using the pattern position placed by yourself...



The double width pattern is placed to the right of your selected pattern position.

●Motif pattern
・When using the pattern position for the first motif which is placed automatically by the computer...
The computer automatically places the pattern position for the first double width motif over the centre of the Needlebed. For 2 to 9 motifs, the double width motifs are made to the right of your selected pattern position.

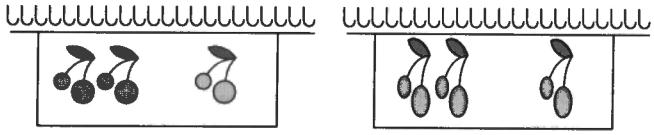


When using a pattern position placed by yourself...
Each motif is positioned to the right of your chosen pattern position.

●How to change the DOUBLE WIDTH whilst you are knitting in pattern...
Change the DOUBLE WIDTH one row before you want to the pattern in double width.
<Ex.>When you want the pattern in double width from 10th row...
When "9" of the pattern row and the carriage direction arrow in reverse colour appear on the Display, turn on (DOUBLE WIDTH).

《DOUBLE LENGTH》

The pattern is knitted in double length.

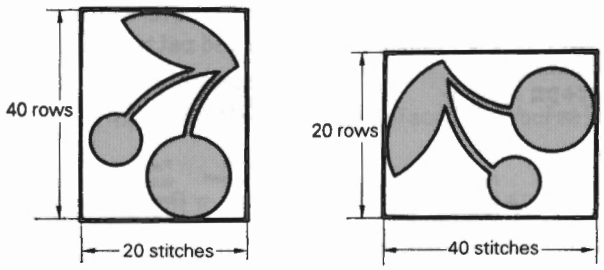


●How to change the DOUBLE LENGTH whilst you are knitting in pattern...
Change the DOUBLE LENGTH on the row you want the pattern to knit in double length.
<Ex.>When you want the pattern in double length from 10th row...
When "10" of the pattern row and the carriage direction arrow in reverse colour appear on the Display, turn on (DOUBLE LENGTH).

《ROTATION》

The pattern is rotated 90° counter-clockwise, seen from the purl side.
When you rotate the pattern, the stitches become rows and vice-versa.

OFF ON



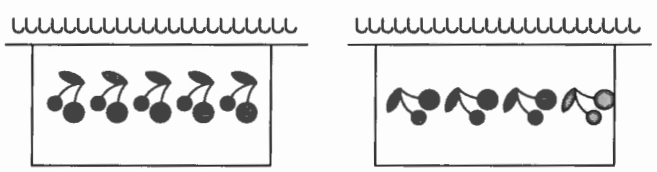
<Ex.>20 stitches x 40 rows 40 stitches x 20 rows

NOTE:When you rotate the pattern which has more than 200 rows, only the top 200 rows of the pattern will appear on the knitting.

When you rotate fairisle patterns with memo data, this data will not appear on the Display.

●All over pattern
· When using the pattern position which is placed automatically by the computer...

OFF ON



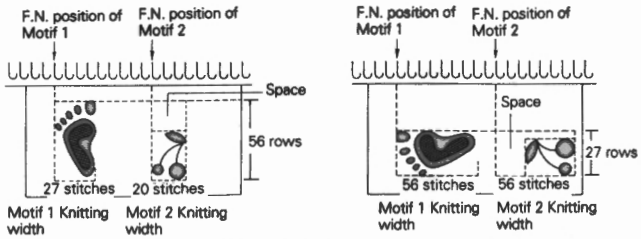
The centre of rotated pattern is placed at the centre of the Needlebed.

· When using a pattern position placed by yourself...
The computer places the pattern according to the position you have entered.

●Motif pattern
· The computer automatically places the pattern position for the first rotated motif over the centre of the Needlebed. For 2 to 9 motifs, the rotated motifs are positioned to the right of your chosen pattern position.

· When you use the ROTATION for two motifs or more, the stitches and rows of Motif 2-9 are set automatically the same as those of the pattern for Motif 1.

OFF ON

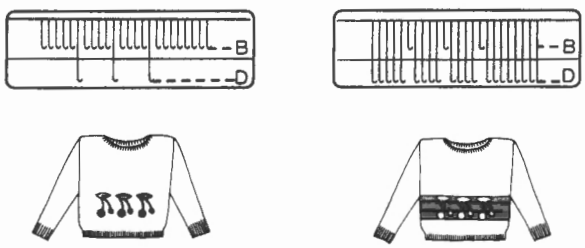


●How to change the ROTATION whist you are knitting in pattern...
Change the ROTATION one row before you want the pattern to be rotated.
<Ex.>When you want the pattern to be rotated from 10th row...
When "9" of the pattern row and the carriage direction arrow in reverse colour appear on the Display, turn on (ROTATION).
※When you turn on the ROTATION, the rotated pattern is knitted from the "first" row of the pattern.

《NEGATIVE》

The pattern is knitted in negative.
When use the Single Bed Colour Changer(KHC), turn on (NEGATIVE). (See page 88)

OFF ON



· When the NEGATIVE is OFF...
Needles corresponding to the black square(■) in the diagram are selected to D position, and the other needles remain in B position.
· When the NEGATIVE is ON...
Needles corresponding to the black square(■) in the diagram remain in B position, and the other needles are selected to D position.

●How to change the NEGATIVE whilst you are knitting in pattern...
Change the NEGATIVE one row before you want the pattern in negative.
<Ex.>When you want the pattern knitted in negative from 10th row...
When "9" of the pattern row and the carriage direction arrow in reverse colour appear on the Display, turn on (NEGATIVE).

《MC RIB》

Turn on (MC RIB) when you wish to knit the Multi-colour Rib patterns. (See page 91.)

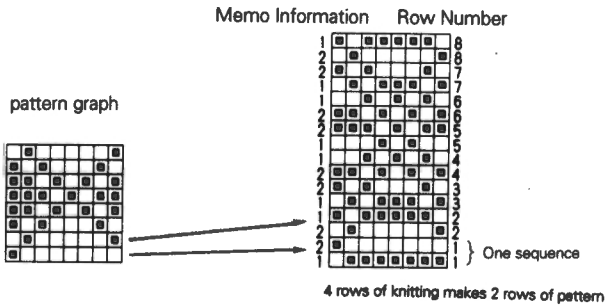
●NOTE

※Do not turn on (MC RIB) when you knit "STITCH WORLD III" Pattern No.484-498.

※You need to select (DOUBLE LENGTH) and (MC RIB) when you knit Pattern No.479-483 and patterns which you have created yourself with three/four colours in a row.

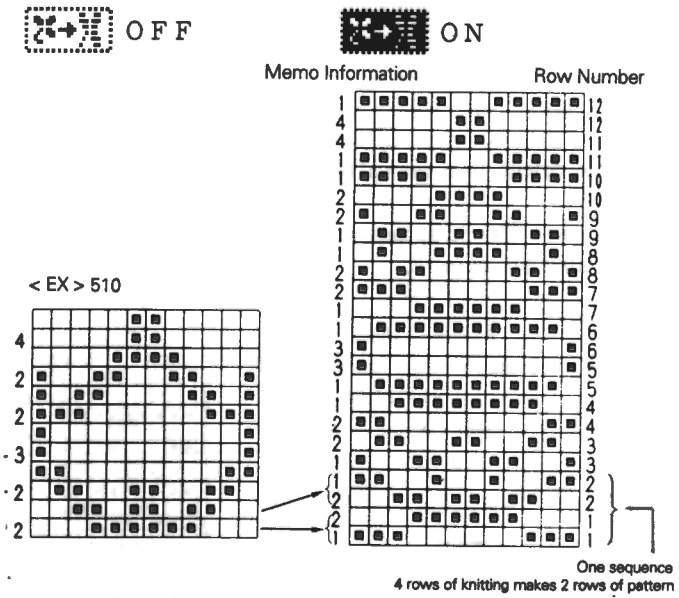
●Two colour rib pattern

OFF ON



・When there is no memo information of the pattern...
The number 1 in the memo tells you to knit with the main yarn, and the number 2 tells you to knit with the contrast yarn, when turning on the MC RIB.

OFF ON



・When there is memo information in the pattern...
The computer automatically arranges the pattern data to knit yarns separately based on the memo information on the diagram.

●Three/Four colour in a row rib pattern

The pattern data of Pattern No.479-483 and created Three/Four colour in a row patterns are arranged and stored in the computer, in order to knit yarns 1-4. If all three or four colours are not used in any one row, the memo data "S" (Skip Row) is set to the row.

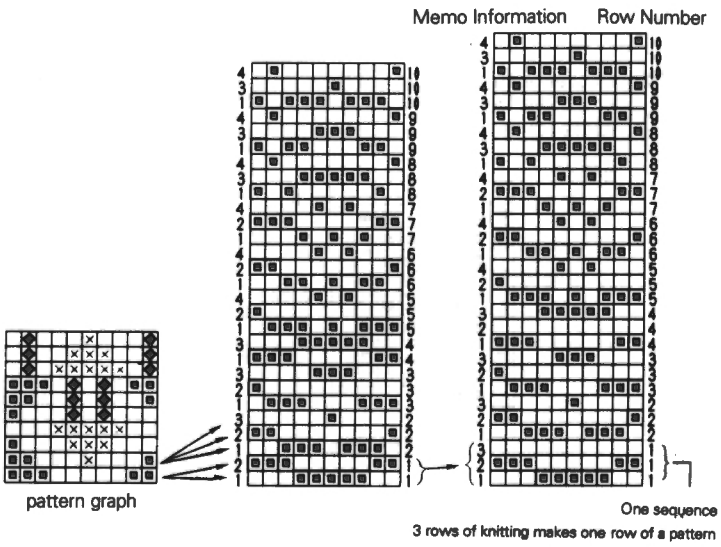
・When the MC RIB is OFF...
The pattern data of colours which are used in one row just appears on the Display. (The pattern data with "S" does not appear.)

※When you knit Multi-colour Skip Stitch pattern, turn off (MC RIB).

・When the MC RIB is ON...
Regardless of the number of colours, the pattern data of all colours will appear on the Display. The pattern data of three/four colours appears when knitting Three/Four colour in a row pattern.

・The memo data with "S" is automatically arranged to the data of a specific colour. Only KR stitches are knitted in these rows.

OFF ON



※When you change the MC RIB, the pattern row returns to "1".

MAIN MENU

【DESIGNING PROGRAM】

This program is used to create a new pattern, draw your garment diagram, edit or delete created pattern and garment. There are six different programs in the sub menu:

《PATTERN CREATION》
This is used to create a new stitch pattern.

《PATTERN MODIFICATION》
This is used to modify the pattern which you have created.

《PATTERN DELETION》
This is used to delete the pattern which you have created.

《GARMENT CREATION 》
This is used to draw your own garment diagram.

《GARMENT ALTERATION》
This is used to alter your own garment diagram.

《GARMENT DELETION》
This is used to delete your own garment diagram.

●HOW TO PROGRAM

① Select (DESIGNING) in main menu, and push ↵ key.

② Select the one which you want to use from the screen. Push ↵ key.

《PATTERN CREATION》

This is used to create new patterns such as black/white pattern(basic pattern), three-colour in a row pattern and four-colour in a row pattern.
※It is recommended to create a pattern with an even number of rows, so as to change yarns easily.

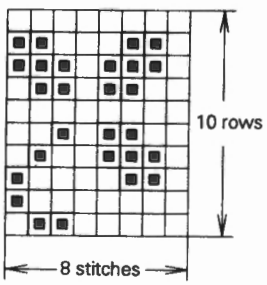
●Black/White pattern (basic pattern)

· Black/white pattern is the pattern which consists of □ and ■.

· All patterns except Three/Four-colour Skip Stitch pattern and Multi-colour Rib-jacquard are black/white pattern.

· You can create this kind of patterns with the "1/□" and "2/■" keys.

<Ex.>



· When VARIATION are all set to "OFF"...
A stitch entered with "1/□" key remains in B position.
A stitch entered with "2/■" key is selected to D position.

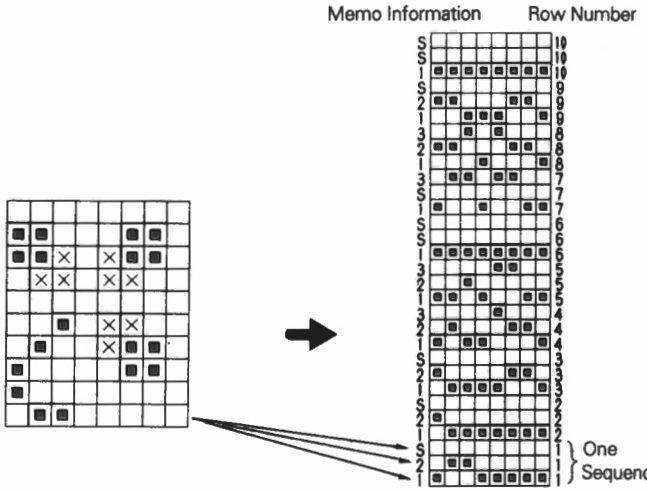
●Three/Four-colour in a row pattern

· You can use three colours/four colours in one row, and use up to six colours in the whole.

· The computer arranges and stores the data of three/four colour in a row pattern to knit yarn 1-3/4 separately.

<Ex.>Three colour in a row pattern

Memo "S" (SKIP ROW) is automatically set in the memo where you have not used all colours.



・Memo information will correspond to the number which you have used to enter the pattern data.

<Ex.>When you enter the memo data with the "3/☒" key, "3" appears in the memo.

※You cannot use more colour in a row than you have selected at PATTERN COLOURING. If you try to use more colours, the error message will appear on the Display.

●PATTERN CREATING SCREEN

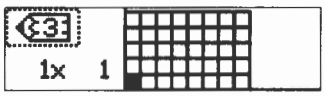
・After setting numbers of stitches and rows for your own pattern, the pattern creating screen appears on the Display. Initially all stitches on the grid are shown as white.

・A blinking stitch means that the cursor is in that square.

・You can colour it with the Stitch keys and move the cursor by the Direction key, to enter the pattern data.

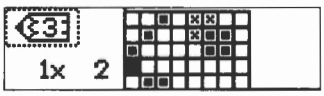
<Ex.>The following example is worked using three colour in a row pattern on page 33.

[When the pattern creating screen first appear on the Display]

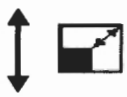


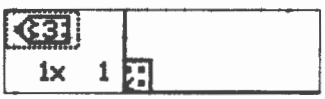
All stitches are in □ . 1 x 1 shows the first stitch and the first row ,the place where the cursor is.

[By pushing the Screen Change key after entering some stitches]



・PATTERN CREATING SCREEN
You can enter your own pattern with this screen. The screen can be moved by the Direction key to show any part of the pattern.





・REDUCED SCREEN
One stitch corresponds to one dot in this reduced screen. You can see a pattern area of 72 stitches and 32 rows.

※The reduced screen shows only one colour on the cursor. The blinking area in this screen indicates the area of the pattern creating screen.

※You can not enter a pattern in the reduced screen.

●HOW TO PROGRAM

<Ex.>The following example is worked to create three colour in a row pattern on page 33.

① Select (DESIGNING) in the main menu, and push ↵ key.

② Select (PATTERN CREATION), and push ↵ key.

<Ex.> Select .

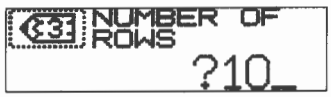
③ The screen of "PATTERN COLOURING" appears on the Display. Select the icon which you want to use, and push ↵ key.

: Black/White pattern
: Three colour in a row pattern
: Four colour in a row pattern

The computer allocates the number 901 for your first pattern, number 902 for your second pattern, and so on automatically.
※In order to avoid confusion, it is recommended to write down the pattern number.

<Ex.> Enter 8.

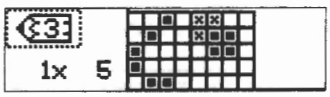
④ Enter the number of stitches with the Numeral keys, and push ↵ key.



<Ex.> Enter 10.

⑤ The Display shows the maximum number of rows available. Enter the number of rows for your own pattern. Then, push ↵ key.

※If you want to enter more rows than the Display shows, delete unnecessary patterns or garments in (PATTERN DELETION) or (GARMENT DELETION).



<Ex.> Enter the pattern data with the Stitch keys.

⑥ The pattern creating screen appears on the Display. Enter your own pattern data with the Direction key and the Stitch keys.

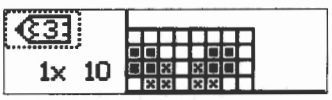
☆Usable Stitch keys

・Black/White pattern

□ ■

・Three/Four colour in a row pattern

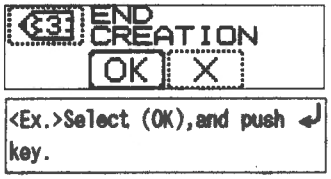
□ ■ ☒ ◆ ⊥ ⊡



・Push the Direction key to move the visible part to a new part.

<Ex.>After you have finished entering the pattern data, push ↵ key.

・After you have finished entering the pattern data, push ↵ key.



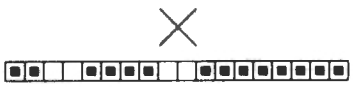
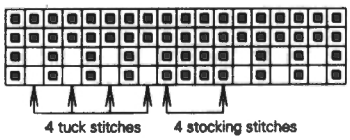
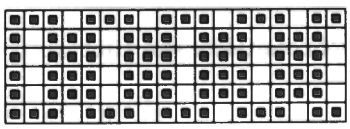
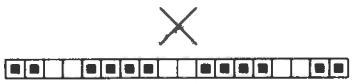
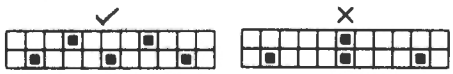
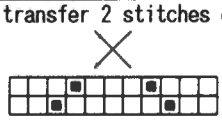
<Ex.>Select (OK),and push ↵ key.

⑦ The screen of "END CREATION" appears on the Display.
If you want to finish the program, select (OK) and push ↵ key. The main menu appears.
If you wish to continue your creation, select (×) and push ↵ key. The pattern creating screen reappears.

NOTE: Always select (OK) to finish your creation. If you have not selected (OK), the error message will appear when using (PATTERN POSITION INPUT).

GUIDELINES WHEN MAKING YOUR OWN PATTERNS

●When designing your own stitch patterns, please bear the following points in mind.

	STITCHES	ROWS
TUCK STITCH PATTERN MULTI-COLOUR TUCK STITCH PATTERN □…Tuck Stitch ■…Stocking Stitch	You cannot have two tuck stitches together. 	(1)When you want stocking stitch between 2 rows of 1x1 tuck stitch, do not repeat the 1x1 tuck stitch more than 4 times, or have more than 4 stocking stitches between the 1x1 tuck stitches.  This gives a seersucker effect.
		(2)Do not pull up the stitches more than 4 rows, or for 3 or 4 row tuck stitch pattern, have more than 3 stocking stitches between the tuck stitches.  This becomes very difficult to knit.
PLATED TUCK STITCH PATTERN □…Tuck Stitch	You cannot have two tuck stitches together. 	You can only pull up the stitch one row.
WEAVING PATTERN ■…Knitted by needle selected to D-position	Do not weave the yarn over more than five stitches.	
THREAD LACE PATTERN ■…Knitted by needle selected to D-position	Do not select more than 5 needles to D position.	
LACE PATTERN FINE LACE PATTERN ■…Transferred Stitch	You cannot transfer two stitches together.	Do not try to transfer the same stitch over more than one row. 
		Do not try to transfer 2 stitches diagonally. 
MULTI-COLOUR RIB (2, 3 or 4 colours)	Multi-colour Rib - (Jacquard) this type of work is achieved by using a ribbing attachment and colour changer with your machine. ・Knit two colour rib pattern with (MC RIB) ON. ・Knit three/four colour in a pattern with (MC RIB) and (DOUBLE LENGTH) ON to change the yarns every two rows. Enter the pattern data on your sheet, as it is. ※When you design a Multi-colour rib pattern (2 colours per row) check that total number of pattern rows are "even", and that the yarn is changed "every even row number".	
MULTI-COLOUR SKIP STITCH PATTERN (3 or 4 colours)	Knit these patterns with (DOUBLE LENGTH) ON to change the yarns every even row number.	

《PATTERN MODIFICATION》

This is used to modify your own pattern which you have entered in (PATTERN CREATION).

●NOTE

You can only change the pattern data in your own pattern.

※You cannot change the pattern colouring, such as three-colour in a row to Black/white pattern.

※You cannot change the numbers of stitches and rows.

●HOW TO PROGRAM

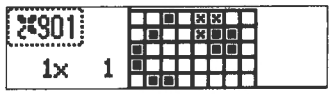
The following example is worked to modify three-colour in a row pattern on page 33.

① Select (DESIGNING) in the main menu, and push ↵ key.

② Select (PATTERN MODIFICATION), and push ↵ key.

<Ex.> Select 901.

③ Select the pattern number which you want to modify, and push ↵ key.



④ The pattern creating screen appears on the Display.
Change the pattern data in the same way as PATTERN CREATION.
After you have finished your modification, push ↵ key.

⑤"END CREATION" appears on the Display.
If you want to finish your modification, select (OK) and push ↵ key.
The main menu appears.
If you wish to continue your modification, select (×),and push ↵ key. The pattern creating screen reappears.

※Always select (OK) to finish your work. If you have not selected (OK), you cannot position the pattern in PATTERN POSITION INPUT.

《PATTERN DELETION》

This is used to delete your own pattern which you have entered in (PATTERN CREATION).

●NOTE

※When you delete the pattern entered in (PATTERN POSITION INPUT), the data of PATTERN POSITION INPUT will be cancelled.

※When you delete one of patterns used in motif patterning, all data of PATTERN POSITION INPUT will be cancelled.

●HOW TO PROGRAM

① Select (DESIGNING) in the main menu, and push ↵ key.

② Select (PATTERN DELETION), and push ↵ key.

③ Select the pattern number which you want to delete, and push ↵ key.

・When you want to delete all patterns at once, select (ALL) and push ↵ key.

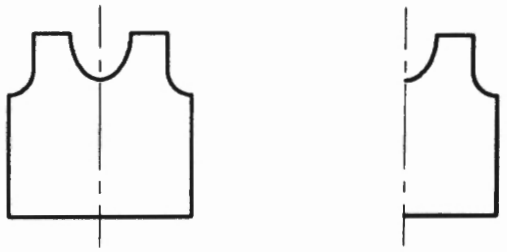
④ If you want to delete the pattern, select (OK) and push ↵ key.
The main menu appears.
If you wish to keep the pattern, select (×) and push ↵ key.
The screen at Step ③ reappears.

《GARMENT CREATION》

This is used to draw your own garment diagram.

● : SYMMETRICAL SHAPE

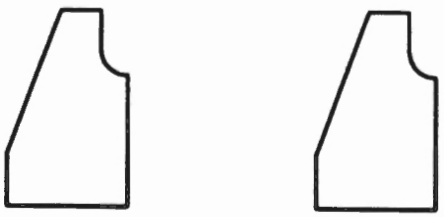
- When you draw a symmetrical garment diagram, enter the data of right half of the garment only.



Actual shape for knitting Shape for entering the data

● : NON-SYMMETRICAL SHAPE

- When you draw a non-symmetrical garment diagram, enter the data of whole garment.

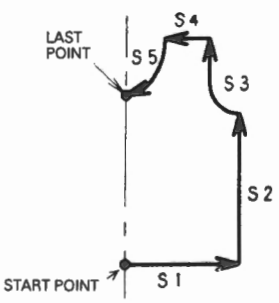


Actual shape for knitting Shape for entering the data

● S1 S2 S3...

STAGE NUMBER (S1),(S2),(S3)...

- The garment shape consists of various kind of lines.
- Before you draw a garment diagram in the computer... Put each stage number such as S1,S2,S3 ... on each line of the garment from the start point as below:
- You need to enter each line data at each stage.
- When (S) appears on the Display in this program, you can move back to the previous stage by using the Left key. If you change any line data, all following entered data will be cancelled.



● LINES IN THE LINE LIST

- There are twelve kinds of lines for drawing a garment diagram in the computer.
- You can find the line list printed on the CB-1.
- You can enter each line with its number.

☆LINE LIST

(Display proceeds ①,②,③...to the right)

① LINE NO.		②	MEASUREMENTS		
NO.	LINE	LINE COURSE	③ CM FOR ENTERING (WIDTH=X, LENGTH=Y)	④ CM FOR ADJUSTABLE DEPTH : Z	⑤ CALCULATED LENGTH OF CURVE : L
1	←X→		X		
2	Y		Y		
3	←X→ Y		X, Y		
4	←X→ Y		X, Y		
5	Z ←X→ Y		X, Y	Z	L
6	Z ←X→ Y		X, Y	Z	L
7	Z ←X→ Y		X, Y	Z	L
8	Z ←X→ Y		X, Y	Z	L
9	←X→		X, Y		L
10	Y ←X→		X, Y		L
11	Y →X←		X, Y		L
12	Y ←X→		X, Y		L

●LINE COURSE

· There are two kinds of courses for drawing each line. Select upward or downward. The computer shows only one course depending on lines.

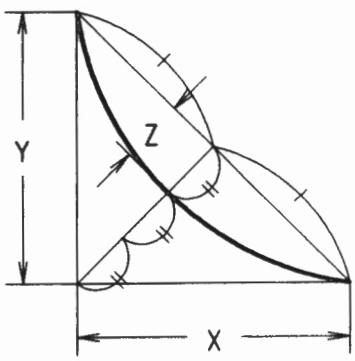
●MEASUREMENTS

· You can enter each measurement for width in "X" and length in "Y", shown in the line list.
· The depth of curved line in "Z" and the length of line in "L" are calculated by the computer. "Z" is adjustable but "L" is not.
· You can enter each measurement in cm to the first decimal place.

●CONTENTS IN LINES

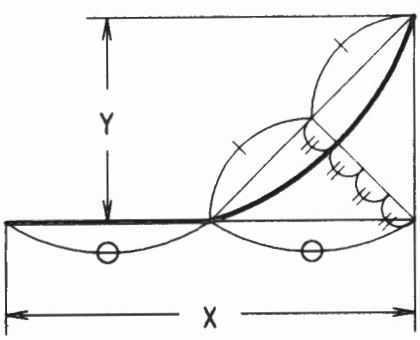
· Line No.5-12 are already set in the computer as below:

☆LINE NO.5-8
When you want to draw a curved line freely, use Line No.5-8.

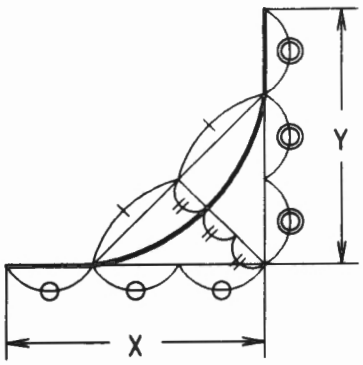


※The depth of "Z" is adjustable.

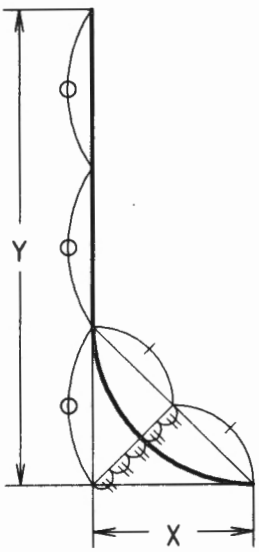
☆LINE NO.9
This line is used to draw a back neckline.



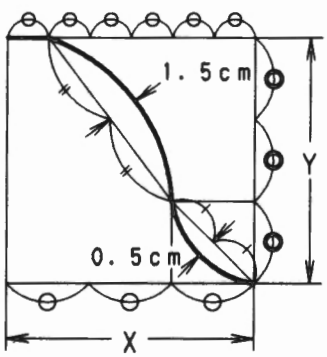
☆LINE NO.10
This line is used to draw a front neckline.



☆LINE NO.11
This line is used to draw an armhole line.

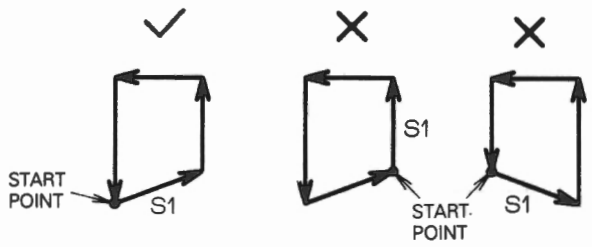


☆LINE NO.12
This line is used to draw a sleeve cap.

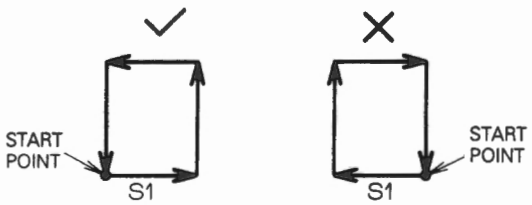


●NOTE

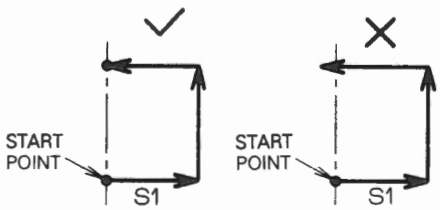
· You need to start drawing a garment from the bottom.



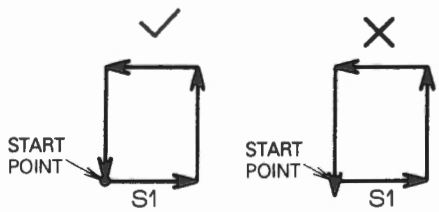
· Draw a garment counterclockwise.



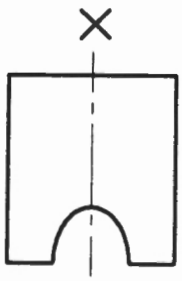
· When you draw a symmetrical garment diagram...
You need to finish a line at the centre line on the screen. You cannot cross over the centre line. If you cross over the centre line, the error message will appear on the Display.



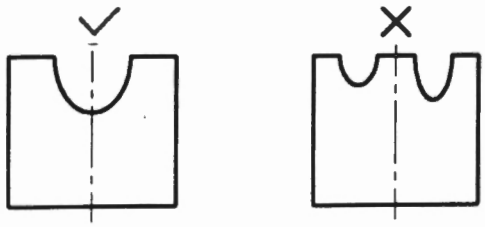
· When you draw a non-symmetrical garment diagram...
You need to finish a line at the start point.



· You cannot draw a garment diagram as below.

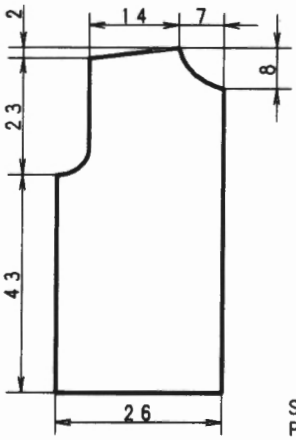


· You cannot draw a garment diagram as below.

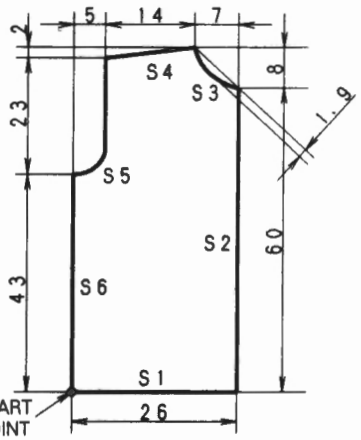


●BEFORE ENTERING THE GARMENT DATA
<Ex.> Non-symmetrical shape: Right front of cardigan

Actual shape for knitting (cm)



Shape for entering the data (cm)



☆NOTE
Please keep the following points in mind:
1.Symmetrical or Non-symmetrical garment diagram ?
2.Start position from the bottom left.
3.Write down each stage number S1,S2..in counterclockwise direction.
4.Write down each measurement for X or Y. If necessary, write down the measurement for Z.
5.End at the centre line or at the start point.

●HOW TO PROGRAM
The following example is worked to enter the above cardigan.

① Select (DESIGNING) in the main menu, and push ↵ key.

② Select (GARMENT CREATION), and push ↵ key.

<Ex.> Garment No. 1 appears.
Select .

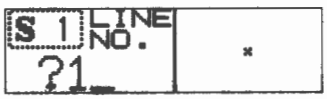
③ The left screen appears. The number at the left is the garment number which you are drawing.
Select (SYMMETRICAL) or (NON-SYMMETRICAL), and push ↵ key.

※In order to avoid confusion, it is recommended to write down the garment number.

<Ex.> Push ↵ key.

④ S1 (Stage 1) appears, and push ↵ key.

※A blinking dot "x" is each start point of lines. Every time you enter the line data, lines are drawn on the Display.



<Ex.> Enter 1.

⑤ Enter the line number which you have selected from the line list with the Numeral key, and push ↵ key.

<Ex.> Push ↵ key.

⑥ Select the icon which indicates the line course, and push ↵ key.

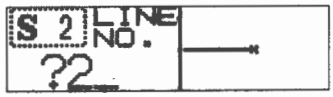
<Ex.> Enter 26.

⑦ Enter the measurement of line with the Numeral and Decimal keys, and push ↵ key.

<Ex.> Push ↵ key.

⑧ S2 (Stage 2) appears, and push ↵ key.

※If you want to return to the previous stage S1, push the Left key and select (S1). Then, you can modify the line data of S1. In this case, all following data will be cancelled.



<Ex.> Enter 2.

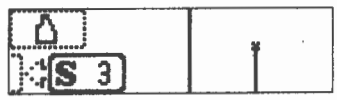
⑨ Enter the line number which you have selected from the line list with the Numeral key, and push ↵ key.

<Ex.> Push ↵ key.

⑩ Select the icon which indicates the line course, and push ↵ key.

<Ex.> Enter 60.

⑪ Enter the measurement of line with the Numeral and Decimal keys, and push ↵ key.



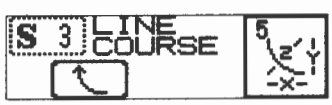
<Ex.> Push ↵ key.

⑫ S3 (Stage 3) appears, and push ↵ key.
※If you want to return to the previous stage, select (S2).

<Ex.> Enter 5.

⑬ Enter the line number which you have selected from the line list with the Numeral key, and push ↵ key.

※You can draw a curved line with Line No.5 freely. You can also draw a specific front neckline with Line No.10.



<Ex.> Push ↵ key.

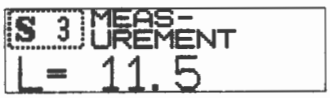
⑭ Select the icon which indicates the line course, and push ↵ key.

<Ex.> Enter 7 in X.

<Ex.> Enter 8 in Y.

<Ex.> Z=1.7 appears. To change it, enter 1.9.

⑮ Enter each measurement of line with the Numeral and Decimal keys, and push ↵ key.
The depth of "Z" is automatically calculated.
If you wish to use it, push ↵ key.
If not, enter a new number and push ↵ key.
The length of "L" is automatically calculated.
After confirming it, push ↵ key.



<Ex.> L=11.5 appears. This length cannot be changed. Push ↵ key.

<Ex.> Push ↵ key.

⑯ S4 (Stage 4) appears, and push ↵ key.
※If you want to return to the previous stage, select (S3).

<Ex.> Enter 4.

⑰ Enter the line number which you select from the line list with the Numeral key, and push ↵ key.

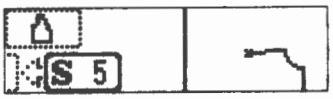
<Ex.> Select ↙.

⑱ Select the icon which indicates the line course, and push ↵ key.

<Ex.> Enter 14 in X.

<Ex.> Enter 2 in Y.

⑲ Enter each measurement of line with the Numeral and Decimal keys, and push ↵ key.



<Ex.> Push ↵ key.

⑳ S5 (Stage 5) appears, and push ↵ key.
※If you want to return to the previous stage, select (S4).

<Ex.> Enter 11.

㉑ Enter the line number which you select from the line list with the Numeral key, and push ↵ key.

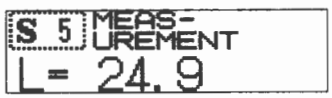
<Ex.> Select ↵.

㉒ Select the icon which indicates the line course, and push ↵ key.

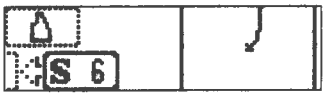
<Ex.> Enter 5 in X.

<Ex.> Enter 23 in Y.

㉓ Enter each measurement of line with the Numeral and Decimal keys, and push ↵ key. The length of its curved line "L" is automatically calculated. After confirming it, push ↵ key.



<Ex.> L=24.9 appears. This length cannot be changed. Push ↵ key.



<Ex.> Push ↵ key.

㉔S6 (Stage 6) appears, and push ↵ key.
※If you want to return to the previous stage, select (S5).

<Ex.> Enter 2.

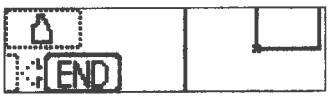
㉕Enter the line number which you select from the line list with the Numeral key, and push ↵ key.

<Ex.> Select ↕.

㉖ Select the icon which indicates the line course, and push ↵ key.

<Ex.> Enter 43 in Y.

㉗ Enter the measurement of line with the Numeral and Decimal keys, and push ↵ key.



<Ex.> Push ↵ key.

㉘(END) appears on the Display. Make sure to push ↵ key to finish your creation. Then, the main menu appears on the Display.

※When (END) does not appear at the final stage, it means that you have entered wrong line data in the program. Return to S1 and check each line data to find the wrong line data.
※When you modify the line data, its following data will be cancelled. Again, enter your line data.

NOTE :
When you finish drawing garment diagram...
Make sure to push ↵ key while (END) appears on the Display.
If you have not selected (END), the error message will appear when using GARMENT POSITION INPUT.

《GARMENT ALTERATION》

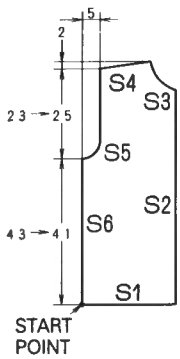
This is used to alter a garment diagram which you have entered.

●NOTE
※Once you have selected its shape, you cannot change a symmetrical shape to non-symmetrical one, and vice versa.

※If a positioned garment has been altered, the program of (GARMENT POSITION INPUT) is cancelled.

※When you want to alter some line data, start to correct one from a smaller stage number.

●HOW TO PROGRAM
<Ex.> The following example is worked to alter the measurement of the armhole in cardigan on page 39.



① Select(DESIGNING) in the main menu, and push ↵ key.

② Select (GARMENT ALTERATION), and push ↵ key.

<Ex.> Select 1 .

③ Select the garment number which you want to alter, and push ↵ key.

<Ex.> Select S5.

④ Select the stage number which you want to alter, and push ↵ key.

<Ex.> Push ↵ key.

⑤ Proceed to the screen with the line data to be altered, and push ↵ key.

<Ex.> Push ↵ key.

⑥ Proceed to the screen to be altered, and push ↵ key.

<Ex.> Push ↵ key.

⑦ Proceed to the screen to be altered, and push ↵ key.

<Ex.> Enter 25 in Y.

<Ex.> This length cannot be changed. Push ↵ key.

⑧ Enter a new measurement of line with the Numeral and Decimal keys, and push ↵ key. The length of its curved line "L" is automatically calculated. After confirming it, push ↵ key.

<Ex.> Push ↵ key.

⑨ Follow the Steps of GARMENT CREATION. To proceed to stage 6, push ↵ key.

<Ex.> Enter 2.

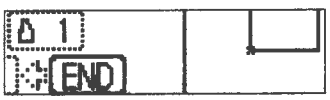
⑩ Enter a new line number with the Numeral key, and push ↵ key.

<Ex.> Select ↕.

⑪ Select the icon which indicates the line course, and push ↵ key.

<Ex.> Enter 41 in Y.

⑫ Enter the measurement of line with the Numeral and Decimal keys, and push ↵ key.



<Ex.> Push ↵ key.

⑬ (END) appears on the Display. Make sure to push ↵ key to finish your modification. Then, the main menu appears on the Display.

NOTE:
When you finish modifying garment diagram...
Make sure to push ↵ key while (END) appears on the Display.
If you have not selected (END), you cannot position your garment in GARMENT POSITION INPUT.

《GARMENT DELETION》

This is used to delete your garment diagram which has been entered in the computer.

NOTE:When you delete the garment entered in (GARMENT POSITION INPUT), the data of GARMENT POSITION INPUT will be cancelled.

●HOW TO PROGRAM

① Select (DESIGNING) in the main menu, and push ↵ key.

② Select (GARMENT DELETION), and push ↵ key.

<Ex.> Select ALL.

③ Select the garment number which you want to delete, and push ↵ key.
When you want to delete all garments at once, select (ALL) and push ↵ key.

<Ex.> Select OK.

④ When you wish to delete the garment, select (OK) and push ↵ key. The main menu appears.
When you wish to keep the garment, select (×) and push ↵ key. The screen at ③ reappears.

MAIN MENU

【MEMO INFORMATION PROGRAM】

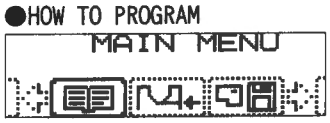
You can program the memo information for pattern knitting, and this will be shown in the memo while you knit.
You can easily enter, delete and modify the memo information of your own pattern.

●NOTE

※Memo information for the patterns in "STITCH WORLD III" cannot be modified or deleted.

※When you create three/four colour in a row pattern, the computer automatically sets its memo information. If you modify its memo information, there is a possibility the error message might appear or the pattern cannot be knitted.

●HOW TO PROGRAM



① Select (MEMO INFORMATION) in the main menu, and push ↵ key.

② Select (MEMO INFORMATION INPUT) or (MEMO INFORMATION DELETION), and push ↵ key

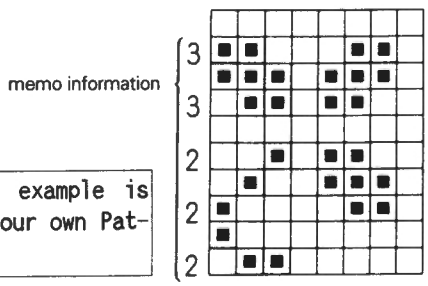
《MEMO INFORMATION INPUT》

You can enter the memo information on your own pattern.

●When you create Lace patterns with (PATTERN CREATION), you must enter memo information according to the following rules. Always enter the number of rows for stocking stitch.

EVEN ROW NUMBER	The number of rows for stocking stitch (below 8 in even number) N as Normal lace, F as Fine lace or No memo information
ODD ROW NUMBER	N as Normal lace, F as Fine lace or No memo information

<Ex.> The following example is worked using your own Pattern No.902.



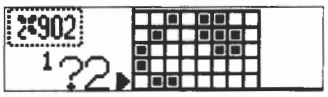
●HOW TO PROGRAM

① Select (MEMO INFORMATION), and push ↵ key.

② Select (MEMO INFORMATION INPUT), and push ↵ key.

<Ex.> Select 902 and push ↵ key.

③ Select the pattern number to which you are going to enter the memo information, and push ↵ key.



<Ex.> Enter 2 and 3.

④ Pushing the ▽ Down or △ Up key, move to the row on which you want to enter or correct the memo information.

⑤ After you have finished entering your memo information, push ↵ key.

<Ex.> Select OK, and push ↵ key.
The main menu appears.

⑥ When you want to finish entering the memo information...
Select (OK), and push ↵ key. The main menu appears.

When you wish to continue entering the memo information...
Select (×), and push ↵ key. The screen at ④ reappears.

《MEMO INFORMATION DELETION》

You can delete all memo information of one pattern.

※If you delete memo information of three/four colour in a row pattern with this program, the memo data will return to its original.

●HOW TO PROGRAM

① Select (MEMO INFORMATION) in the main menu, and push ↵ key.

② Select (MEMO INFORMATION DELETION), and push ↵ key.

<Ex.> Select 902 and push ↵ key.

③ Select the pattern number of which you want to delete the memo information, and push ↵ key.

<Ex.> Select OK, and push ↵ key.
The main menu appears.

④ When you want to delete the memo information...
Select (OK), and push ↵ key. The main menu appears.

When you want to keep the memo information...
Select (×), and push ↵ key. The screen at ③ reappears.

MAIN MENU

【ROW MEMORY INPUT PROGRAM】

You can memorize data on a particular row during knitting in the computer.
You can use this program when you want to knit separately part of the garment midway through knitting, mainly using the optional Knit-Leader.

●NOTE
When you have positioned a garment in (GARMENT POSITION INPUT)...
Neither (ROW MEMORY INPUT) nor (ROW MEMORY RECALL) appears in the main menu.

●HOW TO PROGRAM

① When the specific row to be memorized comes up on the knitting screen, push the Main Menu key. The main menu appears on the Display.

② Select (ROW MEMORY INPUT), and push ↵ key. (ROW MEMORY RECALL) appears next to (ROW MEMORY INPUT). This shows the data on the selected row has been memorized.

③ Select (KNITTING), and push ↵ key. The knitting screen reappears on the Display. Then, continue knitting.

MAIN MENU

【ROW MEMORY RECALL PROGRAM】

You can recall the data on your memorized row to the knitting screen.
You can use this program with the optional Knit-leader.

●NOTE
※When you have positioned a garment in (GARMENT POSITION INPUT)... Neither (ROW MEMORY INPUT) nor (ROW MEMORY RECALL) appears on the Display.
※(ROW MEMORY RECALL) disappears in the main menu after selecting it.

●NOTE
※Before you start knitting, always place the Carriage outside the Position Sensor then continue knitting.

※Once you position a garment, memorized data in (ROW MEMORY INPUT) will be cancelled.

●HOW TO PROGRAM

① When the row comes up to recall memorized data on the knitting screen, push the Main Menu key. The main menu appears on the Display.

② Select (ROW MEMORY RECALL), and push ↵ key. (ROW MEMORY RECALL) disappears in the main menu. This shows the data on the selected row has been recalled.

③ Select (KNITTING), and push ↵ key. The knitting screen returns to the condition when you have selected (ROW MEMORY INPUT).

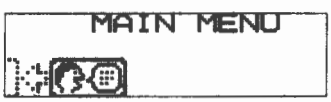
MAIN MENU

【LANGUAGE SELECT PROGRAM】

You can select the languages which appear on the Display.

●NOTE
If the following screen appears on the Display...
The battery in the CB-1 might be used up or the CB-1 might be damaged. Please consult your dealer.

●HOW TO PROGRAM



① Select (LANGUAGE SELECT) in the main menu, and push ↵ key.

② Select the language which you want to use, and push ↵ key. The main menu reappears on the Display.
The indications have changed to the selected one.

PROGRAM PROCEDURE

The following examples show you how to program when you are knitting a garment.
When you want to knit your garment in pattern knitting using the optional Knit Leader, see the examples 1, 2, and 3.
When you want to use (VARIATION), see the example 4.
When you want to create your own pattern, see the examples 5 and 6.
When you want to draw your garment diagram, see the examples 7 and 8.

<Ex.1>
ALL OVER PATTERNING
The following example is worked using "STITCH WORLD III" Fairisle Pattern No.105.

1.Select (POSITIONING), and push ↵ key.
(See page 21.)

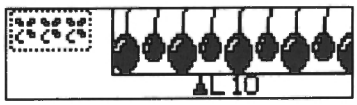
2.Select (PATTERN POSITION INPUT), and push ↵ key.
(See page 21.)

3.Select (K-CARRIAGE),and push ↵ key.

4.Select (ALL OVER PATTERNING), and push ↵ key.
(See page 22.)

5.Enter 105, and push ↵ key.

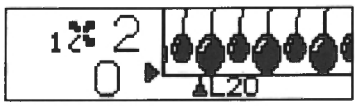
6.Check or enter the position of the left end needle of the centre repeat, and push ↵ key.



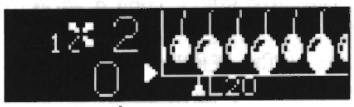
7.Pattern data appears on the Display. Push ↵ key.

8.The main menu appears on the Display.

9.Select (KNITTING), and push ↵ key.
(See page 20.)



10.The knitting screen appears on the Display. Push the "0" and the ▽ Down keys at the same time, and the pattern row to "1" and the row counter to "0" are set automatically.
(See page 14.)



11.Push ↵ key, and the stop screen appears.

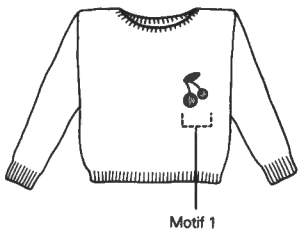
※When you want to begin knitting midway through a pattern... Select (PATTERN ROW SET-UP), and enter the row number where you want to begin.
(See page 19.)

12.Follow the Steps of PATTERN KNITTING on page 55-70 according to the pattern.

<Ex.2>

MOTIFS - ONE PATTERN REPEAT AS A SINGLE MOTIF.

The following example is worked using "STITCH WORLD III" Fairisle Pattern No.105.



1.Select (POSITIONING), and push ↵ key.

(See page 21.)

2.Select (PATTERN POSITION INPUT), and push ↵ key.

(See page 21.)

3.Select (K-CARRIAGE), and push ↵ key.

4.Select (MOTIF PATTERNING), and push ↵ key.

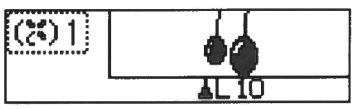
(See page 23.)

5.Select (MOTIF 1), and push ↵ key.

6.Enter 105, and push ↵ key.

7.Enter 1, and push ↵ key.

8.Check or enter the pattern position for the first motif, and push ↵ key.



9.Pattern data appears on the Display. Push ↵ key.

10.Select (END), and push ↵ key.

11.The main menu appears on the Display.

12.Follow the Steps 9-12 of Example 1 on page 47.

<Ex.3>

MOTIFS - THREE PATTERN REPEATS AS MOTIF 1 AND TWO PATTERN REPEATS AS MOTIF 2

The following example is worked using "STITCH WORLD III" Fairisle Pattern No.99 and 105.

1.Select (POSITIONING), and push ↵ key.

(See page 21.)

2.Select (PATTERN POSITION INPUT), and push ↵ key.

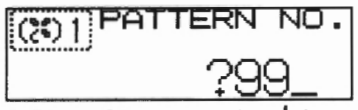
(See page 21.)

3.Select (K-CARRIAGE), and push ↵ key.

4.Select (MOTIF PATTERNING), and push ↵ key.

(See page 23.)

5.Select (MOTIF 1), and push ↵ key.



6.Enter 99, and push ↵ key.

7.Enter 3, and push ↵ key.

8.Pattern is centred.
Change position by selecting (L).
Enter 15, and push ↵ key.

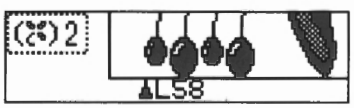
9.Pattern data appears on the Display.
Push ↵ key.

10.Select (MOTIF 2), and push ↵ key.

11.Enter 105, and push ↵ key.

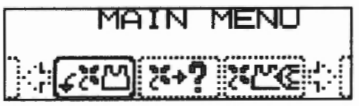
12.Enter 2, and push ↵ key.

13.Select (L), enter 58, and push ↵ key.



14.Pattern data appears on the Display. Push ↵ key.

15.Select (END), and push ↵ key.

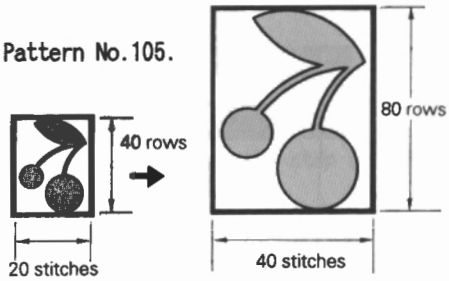


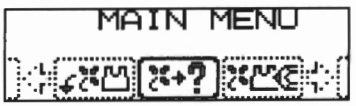
16.The main menu appears on the Display.

17.Follow the Steps 9–12 of Example 1 on page 47.

<Ex.4>
PATTERN VARIATION - DOUBLE LENGTH AND DOUBLE WIDTH

Pattern No.105.





1.Select (PATTERN VARIATION), and push ↵ key.1.
(See page 27.)

2.Select (DOUBLE WIDTH), and push the "2" key.

3.(DOUBLE WIDTH) changes in reverse colour.
Select (DOUBLE LENGTH) and the "2" key.

4.(DOUBLE LENGTH) changes in reverse colour. Push ↵ key.

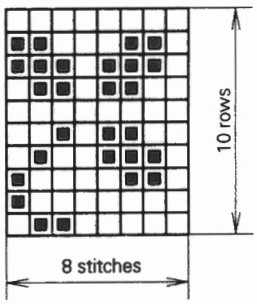
5.The main menu appears on the Display.
Follow the Steps of Example 1, 2 or 3.

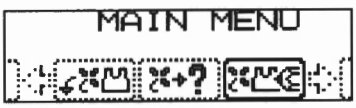
NOTE:Should any icon of(PATTERN VARIATION) be turned on, it can be turned off by selecting it and pushing the "1" key. Variations will remain switched on until you turn them off.

<Ex.5>

PATTERN CREATION - 2 COLOURS

<Ex.>





1.Select (DESIGNING), and push ↵ key.

(See page 33.)

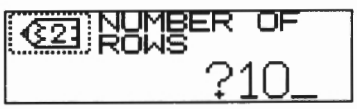
2.Select (PATTERN CREATION), and push ↵ key.

(See page 33.)

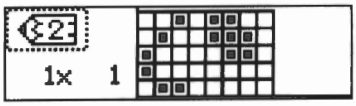
3.Select (BLACK/WHITE PATTERN), and push ↵ key.

※ Your own pattern is given a number by the computer.
Write down this number to avoid confusion.

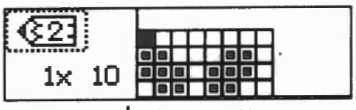
4.Enter 8 as the number of stitches, and push ↵ key.



5.Enter 10 as the number of rows, and push ↵ key.

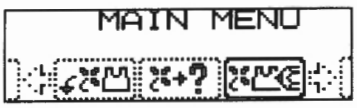


6.The pattern creating screen appears on the Display. Enter your own pattern data with the Direction key and the Stitch keys ("1" and "2" key).



7.Push ↵ key after you have finished your creation.

8.Select (OK), and push ↵ key.

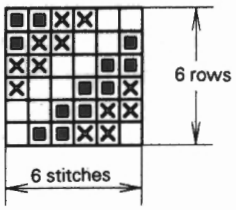


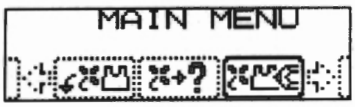
9.The main menu appears on the Display.

10.Follow the Steps of Example 1, 2, or 3.

<Ex.6>
PATTERN CREATION - 3 COLOURS

<Ex.>





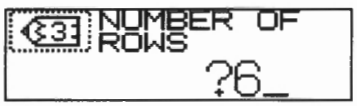
1.Select (DESIGNING), and push ↵ key.
(See page 33.)

2.Select (PATTERN CREATION), and push ↵ key.
(See page 33.)

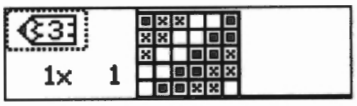
3.Select (3-COLOUR IN A ROW PATTERN), and push ↵ key.

※ Your own pattern is given a number by the computer.
Write down this number to avoid confusion.

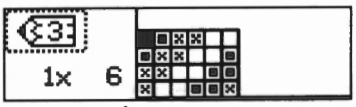
4.Enter 6 as the number of stitches, and push ↵ key.



5.Enter 6 as the number of rows, and push ↵ key.



6.The pattern creating screen appears on the Display. Enter your own pattern data with the Direction key and the Stitch keys ("1"-"6" key).



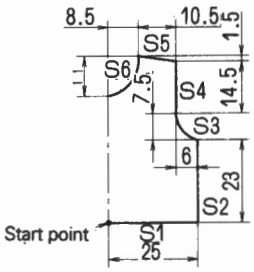
7.Push ↵ key after you have finished your creation.

8.Select (OK), and push ↵ key.

9.The main menu appears on the Display.

10.Follow the Steps of MULTI-COLOUR SKIP STITCH PATTERN on page 88 or MULTI-COLOUR RIB PATTERN on page 91.

<Ex.7>
GARMENT CREATION - FRONT BODICE
The following example is drawing your garment diagram to be knitted in stocking stitch. The tension square used is 29 stitches and 36 rows in 10cm square.



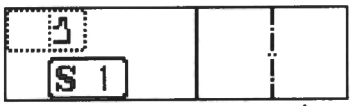
1.Make a tension square in Stocking Stitch.
(See page 71)

2.Select (DESIGNING), and push ↵ key.
(See page 33)

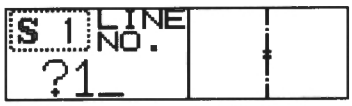
3.Select (GARMENT CREATION), and push ↵ key.
(See page 37)

4.Select (SYMMETRICAL SHAPE), and push ↵ key.

※ Your own garment is given a number by the computer.
Write down this number to avoid confusion.



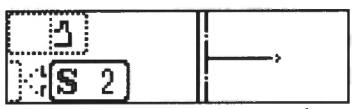
5.S1 appears, and push ↵ key.



6.Enter 1 as the line number from the line list, and push ↵ key.

7.Confirm the line direction by pushing ↵ key.

8.Enter 25 as the width measurement, and push ↵ key.

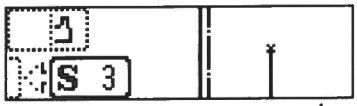


9.S2 appears, and push ↵ key.

10.Enter 2 as the line number, and push ↵ key.

11.Confirm the line direction by pushing ↵ key.

12.Enter 23 as the length measurement, and push ↵ key.



13.S3 appears, and push ↵ key.

14.Enter 5 as the line number, and push ↵ key.

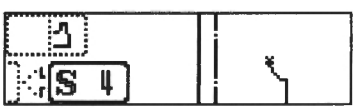
15.Confirm the line direction by pushing ↵ key.

16.Enter 6 as the width measurement, and push ↵ key.

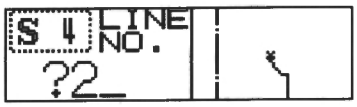
17.Enter 7.5 as the length measurement, and push ↵ key.

18.Z=1.5 appears. Check the depth measurement, and push ↵ key.

19.L=10.2 appears. Confirm the length of the curved line by pushing ↵ key.



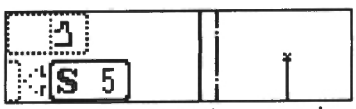
20.S4 appears, and push ↵ key.



21.Enter 2 as the line number, and push ↵ key.

22.Select (UPWARD) as the line direction, and push ↵ key.

23.Enter 14.5 as the length measurement, and push ↵ key.



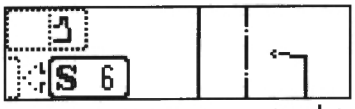
24.S5 appears, and push ↵ key.

25.Enter 3 as the line number, and push ↵ key.

26.Confirm the line direction by pushing ↵ key.

27.Enter 10.5 as the width measurement, and push ↵ key.

28.Enter 1.5 as the length measurement, and push ↵ key.



29.S6 appears, and push ↵ key.

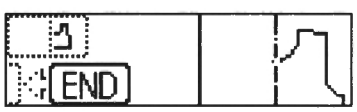
30.Enter 10 as the line number, and push ↵ key.

31.Select (DOWNWARD) as the line direction, and push ↵ key.

32.Enter 8.5 as the width measurement, and push ↵ key.

33.Enter 11 as the length measurement, and push ↵ key.

34.L=16.3 appears. Confirm the length of the curved line by pushing ↵ key.



35.Select (END) to finish the garment creation, and push ↵ key.
The main menu appears.

36.When you continue drawing the back or sleeve, follow the Steps 2-35.

37.The main menu appears. Select (POSITIONING), and push ↵ key.
(See page 21)

38.Select (GARMENT POSITION INPUT), and push ↵ key.
(See page 25)

39.Select (10CM x 10CM), and push ↵ key.

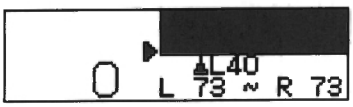
40.Enter 29 as the number of stitches, and push ↵ key.

41.Enter 36 as the number of rows, and push ↵ key.

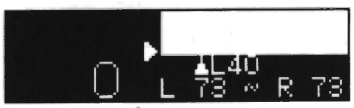
42.Select (GARMENT NO.1), and push ↵ key.

43.Confirm the garment position by pushing ↵ key.

44.The main menu appears. Select (KNITTING), and push ↵ key.



45.The knitting screen appears. The garment width is shown on the Display.

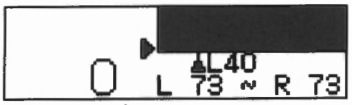


46.Push ↵ key, and the stop screen appears.

NOTE:Before you start knitting, check the number of stitches and rows of the whole garment diagram, using the Direction key.
After checking the garment, push the "0" key and the ▽ Down key at the same time. The garment row returns to "0".
If "KNIT ONE SIDE" appears, see page 72.

47.Push the needles between L73 and R73 to B position. Knit a few rows in stocking stitch with a waste yarn.

NOTE:If you do not waste knit, skip this step.



48. Push ↵ key, and the knitting screen appears. Knit according to the indication on the Display.

NOTE: When you need to knit one part separately (i.e. one side of a neck), the screen "KNIT ONE SIDE" automatically appears. Follow the Steps on page 72.

49. When you want to knit the back or sleeve, follow the Steps 37-48.

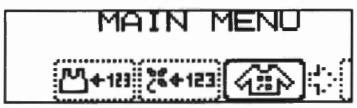
<Ex.8>

GARMENT CREATION - FRONT BODICE

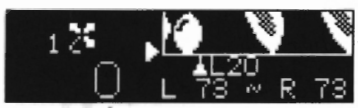
The following example uses the front bodice design from Example 7, knitted in the fairisle design from Example 3.

1. Enter the program of Example 3 on page 48.
   Make a tension square in fairisle, referring to page 71.

2. Enter the program of Example 7. Follow the Steps 37-43 on page 53.



3. The main menu appears. Select (KNITTING), and push ↵ key.



4. Push ↵ key, and the stop screen appears.

5. Push the Screen Change key until the garment diagram appears.

6. Before you start knitting, check the numbers of stitches and rows of the whole garment diagram, using the Direction key.
   If "KNIT ONE SIDE" appears, see page 73.

7. Push the "0" key and the ▽ Down key at the same time.
   The screen returns to the start position.

NOTE: If you want to change the pattern position...
Push ↩ key to return the main menu. Re-enter the program of (PATTERN POSITION INPUT), referring to the Steps of Example 3.

8. Push the needles between L73 and R73 to B position. Knit a few rows in stocking stitch with a waste yarn. Place the K-Carriage outside the Position Sensor.

NOTE: If you do not waste knit, skip this step.

9. See PATTERN KNITTING on page 55-70. Knit according to the indication on the Display.

NOTE: When you need to knit one part separately, the screen "KNIT ONE SIDE" automatically appears. Follow the Steps on page 73.

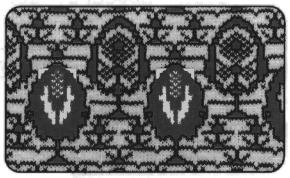
10. If you wish to continue knitting the back or sleeve, follow the Steps 2-9.

PATTERN KNITTING

NOTE:In pattern knitting, always move the K-Carriage 4 needles past the centre of the machine every row. Move the Carriage across the Position Sensor after changing to the stop screen or any other screens during knitting.

FAIRISLE PATTERN - All over pattern knitting

<Ex.> Pattern No.20



●BEFORE STARTING PATTERN KNITTING

①Enter the following programs on the CB-1.

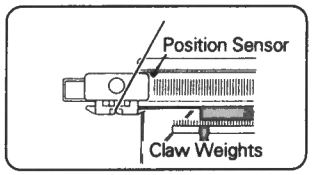
(1)(PATTERN VARIATION)...All icons OFF.

(2)Select the icons as below:

(POSITIONING)→(PATTERN POSITION INPUT)→(K-CARRIAGE)→(ALL OVER PATTERNING)→Pattern No.20→Pattern Position L15

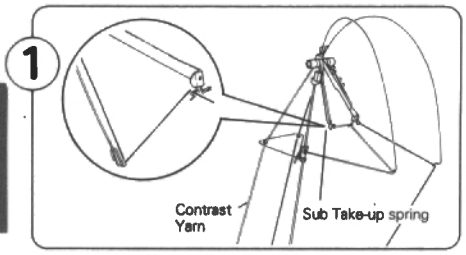
If a garment has been positioned, select (GARMENT POSITION CANCEL).

(3)(KNITTING)...While pushing the "0" key, push the ▽ Down key. The screen returns to the start position. Then, push ↵ key, and the stop screen appears.

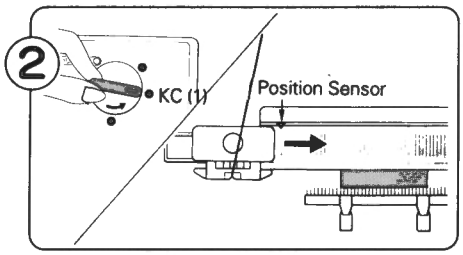


②Knit a few rows in stocking stitch and place the K-Carriage outside the left Position Sensor. Hang the Claw Weights evenly along the Cast-on Comb.

●PATTERN KNITTING

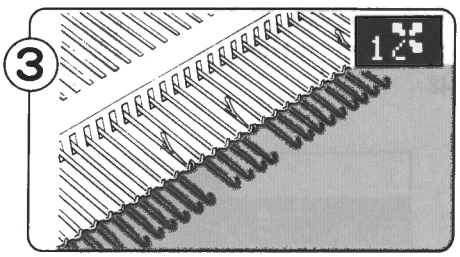


Thread the contrast yarn into the left Yarn Tension Unit, including the Sub Take-up Spring.

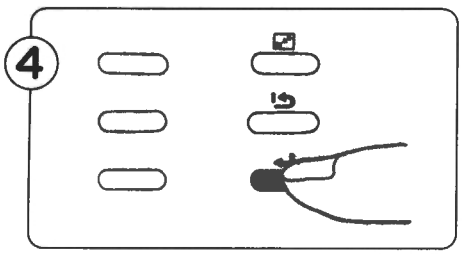


Set the Change knob to KC(I). Move the K-Carriage across the left Position Sensor.

※You only need to take the K- Carriage once outside the Position Sensor when you start pattern knitting.

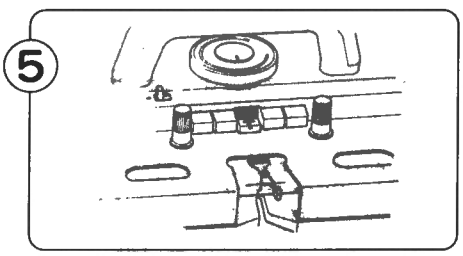


Place the K-Carriage outside the right Position Sensor.
The needles are selected.

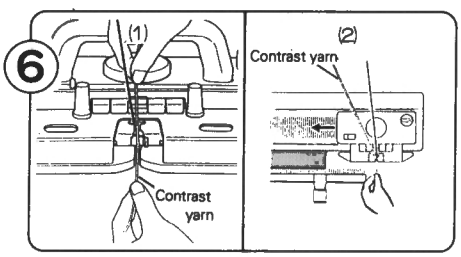


Push ↵ key on the CB-1 to cancel the stop screen. The knitting screen appears on the Display.

※The stop screen locks the condition appearing on the Display.

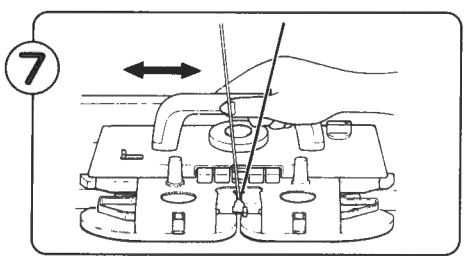


Push the upper MC Button.

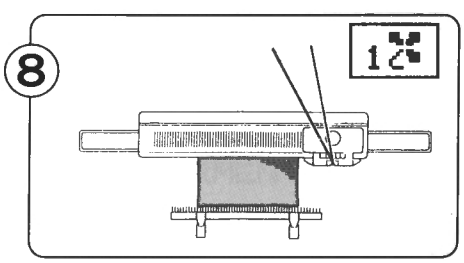


(1)Thread the contrast yarn into Yarn Feeder "B".(You do not have to open the Yarn Feeder Lever.)

(2)Holding the yarn end by hand, move the K-Carriage one row.



Move the K-Carriage back and forth to knit the Fairisle pattern.

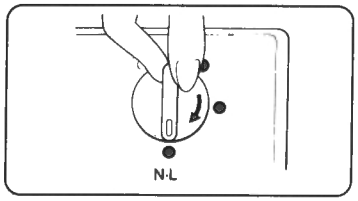


Number "1" of the pattern row reappears on the Display after knitting one complete pattern. Also ,the direction indication changes in reverse colour.

9

· You can either continue... Repeat Steps ⑦ - ⑧.

· Or finish pattern knitting...



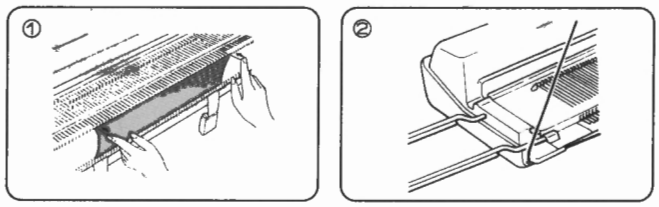
Set the Change Knob to N.L. The Cam Button will be released automatically.

NOTE: When you use more than two different colour yarns, change the yarn according to the memo information.

If there are any rows where you use the main yarn only(i.e. no contrast colour)...

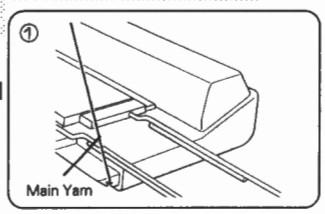
Both end needles will be selected to D position. In this case, follow the Steps 1-3.

1.Bring the end needles back to B position.
2.Take the contrast yarn out of Feeder "B" and hook it around the notch. Then, continue knitting with the main yarn only, bringing the end needles back to B position on each row.
3.When the needles are selected across the row again, rethread the contrast yarn into Feeder "B" and knit the row, holding the contrast yarn so that no loops form at the edges.



If there are any row where you use the contrast yarn only...

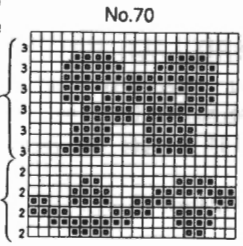
All the needles are selected to D position. In this case, follow the Step 1 and 2.



1.Take the main yarn out of Feeder "A" and hook it around the notch. Then continue knitting with the contrast yarn only.
2.When some needles remain in B position, rethread the main yarn into Feeder "A" and knit one row, holding the main yarn so that no loops form at the edges.

Memo Information in Fairisle Pattern in Your Pattern Book

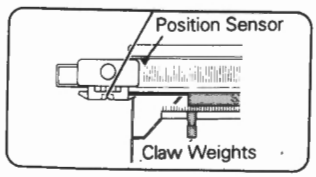
The memo information is used to distinguish between the contrast colour yarns.
No.1 is used for the main yarn and the other numbers for the contrast yarns.



FAIRISLE PATTERN - Motif knitting

<Ex.>Pattern No.103

●BEFORE STARTING PATTERN KNITTING...
①Enter the following programs on the CB-1.
(1)(PATTERN VARIATION)...All icons OFF.
(2)Select the icons as below:
(POSITIONING)→(PATTERN POSITION INPUT)→(K-CARRIAGE)→(MOTIF PATTERNING)→Pattern No.103 · Number of Repeat 1 · Pattern Position L15 in Motif No.1→(END)
If a garment has been positioned, select (GARMENT POSITION CANCEL).
(3)(KNITTING)...While pushing the "0" key, push the ▽ Down key.
The screen returns to the start position.
Then, push ↵ key, and the stop screen appears.

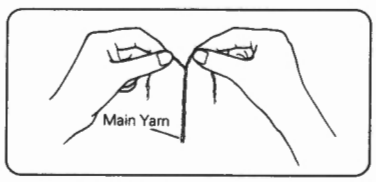


②Knit a few rows in stocking stitch and place the K-Carriage outside the left Position Sensor. Hang the Claw Weights evenly along the Cast-on Comb.

HOW TO KNIT SINGLE MOTIFS

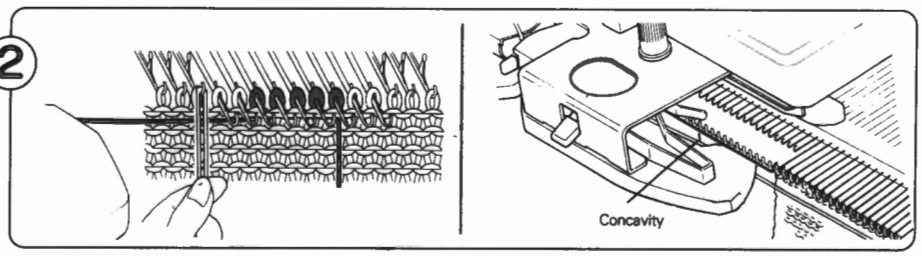
The stitches at the edges of single motifs need to be bound in with the rest of the knitting, so that there are no holes. To do this split the main yarn by untwisting it to give a finer thread of the same colour. We will call this "finishing yarn".

Separate the main yarn in two.



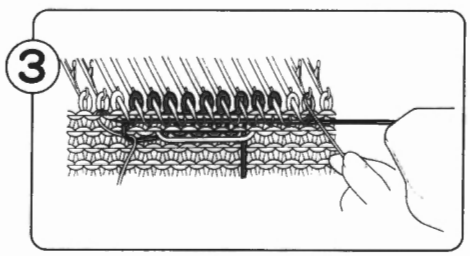
●PATTERN KNITTING

① Follow the Steps ① - ⑥ on page 55. But, set the Change Knob to KC(II) in Step ②.

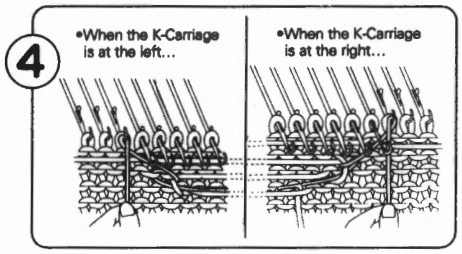
② 

Fold the Finishing yarn in half and hook it on the needle next to the left-end selected needle.
Holding the finishing yarn, move the K-Carriage to the right.

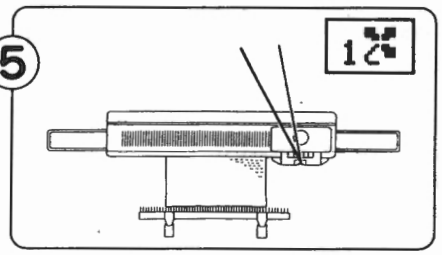
※ Make sure the contrast yarn goes under the concavity in the Sinker Plate.

③ 

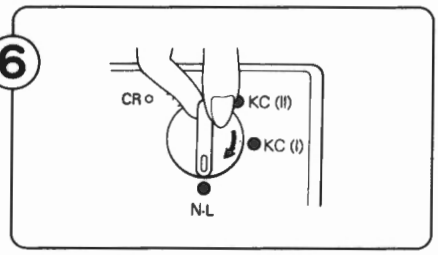
Pass the other end of the finishing yarn under the selected needles, and wrap it from right to left round the needle adjacent to the last selected needle on the right.
Holding the finishing yarn, move the K-Carriage from right to left.



Wrap the finishing yarn around the hook of the needle adjacent to the first needle, and pull it down gently. Ensure that this needle is in B position before you take the K-Carriage across for the next row of knitting.



Number "1" of the pattern row reappears on the Display after knitting one complete pattern. Also, the direction indication changes in reverse colour.



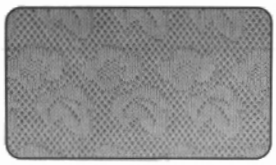
Set the Change Knob to N.L.
The Cam Button will be released automatically.

NOTE: When you use more than two different colour yarns, change the yarn according to the memo information.

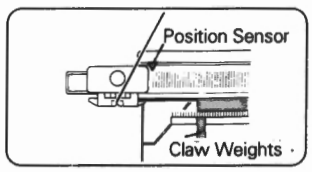
THREAD LACE PATTERN - All over pattern knitting

☆ You can knit this pattern with a combination of medium yarn and very fine yarn.
☆ Use medium (or fine) yarn as the main yarn, and very fine (in a similar colour to the main yarn) for the contrast.
NOTE: If you use two yarns of different colour, stripe might come out on your knitting.

<Ex. Pattern No.356>

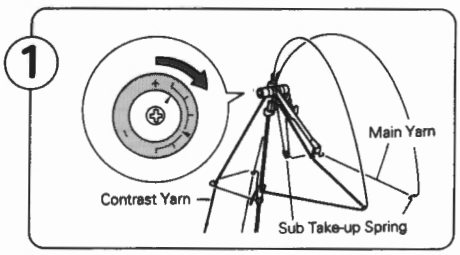


●BEFORE STARTING PATTERN KNITTING...
①Enter the following programs on the CB-1.
(1)(PATTERN VARIATION)...All icons OFF.
(2)Select the icons as below:
(POSITIONING)→(PATTERN POSITION INPUT)→(K-CARRIAGE)→
(ALL OVER PATTERNING)→Pattern No.356 · Pattern Position L12
If a garment has been positioned, select (GARMENT POSITION CANCEL).
(3)(KNITTING)...While pushing the "0" key, push the ▽ Down key.
The screen returns to the start position.
Then, push ↵ key, and the stop screen appears.

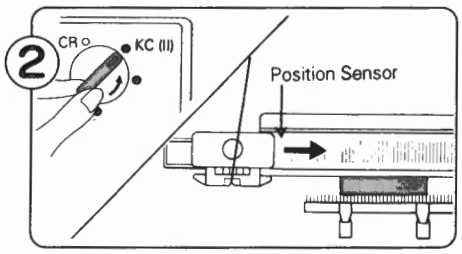


②Knit a few rows in stocking stitch and place the K-Carriage outside the left Position Sensor. Hang the Claw Weights evenly along the Cast-on Comb.

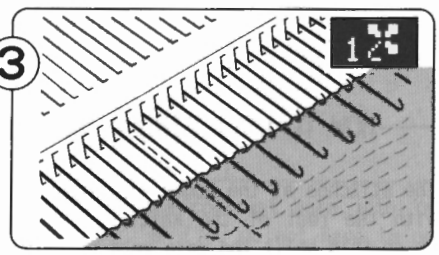
● PATTERN KNITTING



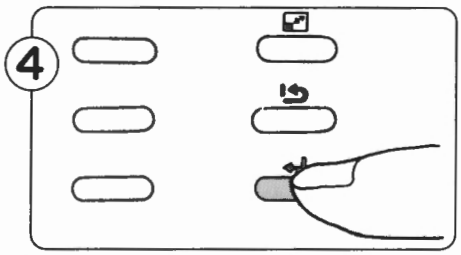
Thread the very fine contrast yarn into the lefthand Yarn Tension Unit. Thread the main yarn into the Sub Take-up Spring.
※Turn the Tension Disc (both right and left) to " + ".



Set the Change knob to KC(II). Move the K-Carriage across the left Position Sensor.
※You only need to take the K-Carriage once outside the Position Sensor when you start pattern knitting.



Place the K-Carriage outside the right Position Sensor.
The needles are selected.

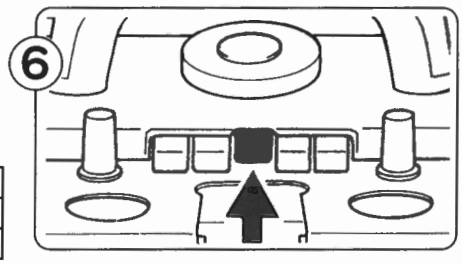


Push ↵ key on the CB-1 to cancel the stop screen. The knitting screen appears on the Display.
※The stop screen locks the condition appearing on the Display.

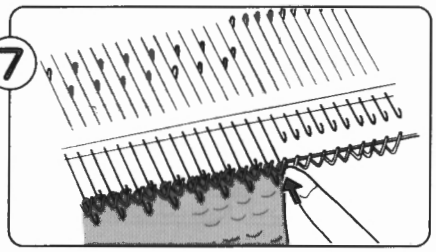
Set the Tension Dial using the Tension Chart.

APPROXIMATE TENSION CHART

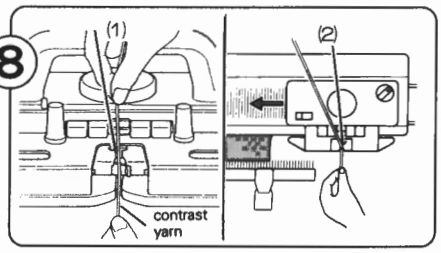
MAIN YARN	CONTRAST YARN	DIAL
Fine Yarn	Very Fine Yarn	4-9
Medium Yarn	Very Fine Yarn	6-9



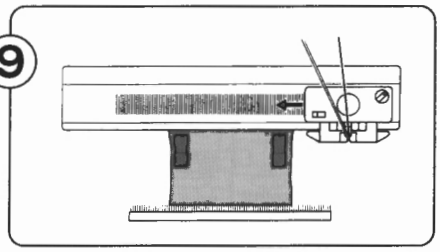
Push the upper and lower buttons (L) at the same time.



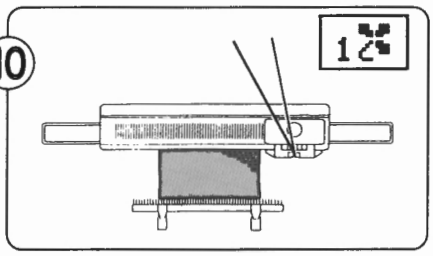
If the end needle is in D position, bring it back to B position.



(1)Thread the contrast yarn into Yarn Feeder "B".(You do not have to open the Yarn Feeder Lever.)
(2)Holding the yarn end by hand, knit one row with the K-Carriage.

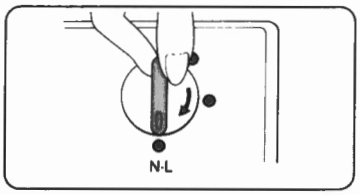


Continue knitting, remembering to push the selected end needle back to B position. (See Step ⑦.)
※Move the K-Carriage slowly.
※Rehang the Claw weights every 20 rows or so.



Number "1" of the pattern row reappears on the Display after knitting one complete pattern. Also ,the direction indication changes in reverse colour.

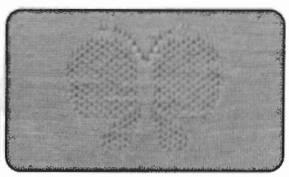
⑪ · You can either continue...
Repeat Steps ⑨ - ⑩ .,
· Or finish pattern knitting...



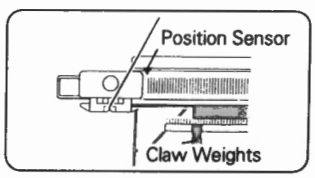
Set the Change Knob to N.L. The Cam Button will be released automatically.

THREAD LACE PATTERN - Motif knitting

<Ex. Pattern No.376>



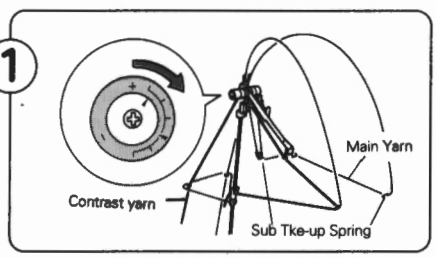
●BEFORE STARTING PATTERN KNITTING
①Enter the following programs on the CB-1.
(1)(PATTERN VARIATION)...All icons OFF.
(2)Select the icons as below:
(POSITIONING)→(PATTERN POSITION INPUT)→(K-CARRIAGE)→
(MOTIF PATTERNING)→Pattern No.376 · Number of Repeats 1 · Pattern Position L19 in Motif No.1→(END)
If a garment has been positioned, select (GARMENT POSITION CANCEL).
(3)(KNITTING)...While pushing the "0" key, push the ▽ Down key.
The screen returns to the start position.
Then, push ↵ key, and the stop screen appears.



②Knit a few rows in stocking stitch and place the K-Carriage outside the left Position Sensor. Hang the Claw Weights evenly along the Cast-on Comb.

● PATTERN KNITTING

The contrast yarn is knitted in with the main yarn throughout Thread lace knitting. So should you knit areas in stocking stitch only, you should use main and contrast yarns together so that these will match those in Thread lace pattern.

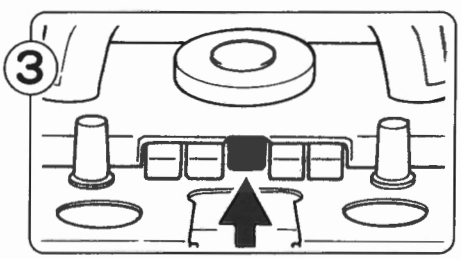


Thread the very fine contrast yarn into the lefthand Yarn Tension Unit.
Thread the main yarn into the Sub Take-up Spring.
※Turn the Tension Disc (both right and left) to " + ".

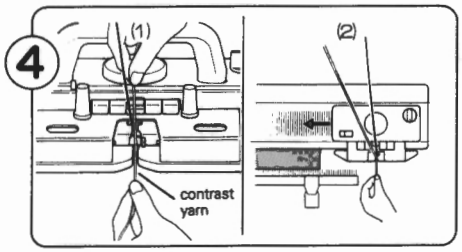
② Set the Tension Dial using the Tension Chart.

APPROXIMATE TENSION CHART

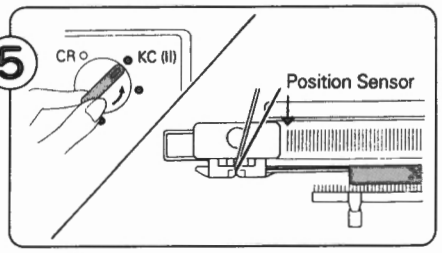
MAIN YARN	CONTRAST YARN	DIAL
Fine Yarn	Very Fine Yarn	4-9
Medium Yarn	Very Fine Yarn	6-9



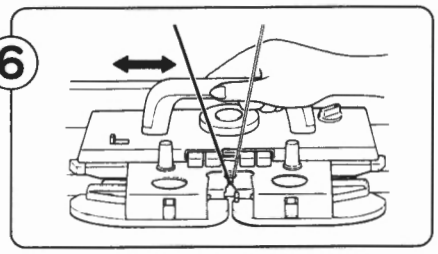
Push the upper and lower buttons (L) at the same time.



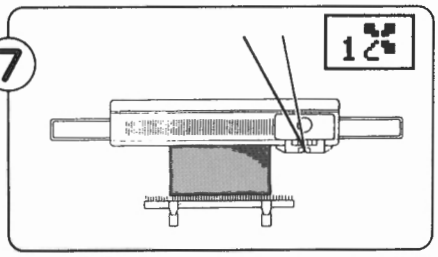
(1)Thread the contrast yarn into Yarn Feeder "B".(You do not have to open the Yarn Feeder Lever.)
(2)Holding the yarn end by hand, knit one row with the K-Carriage.



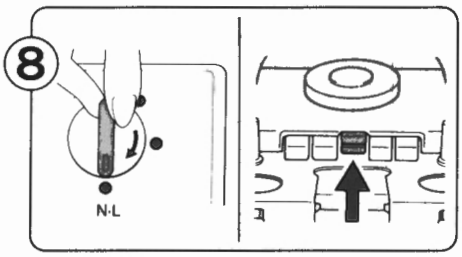
Continue knitting until you want to begin Thread lace knitting. Place the K-Carriage outside the left Position Sensor. Set the Change Knob to KC(II). Move the K-Carriage slowly across the Position Sensor to knit one row.
The needles are selected.
※You only need to take the K-Carriage once outside the Position Sensor when you start pattern knitting.



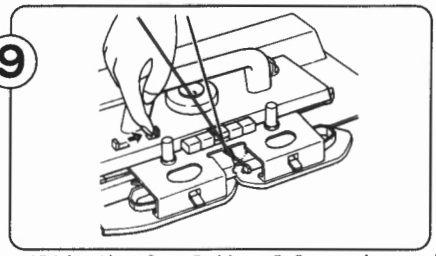
Push ↵ key on the CB-1 to cancel the stop screen. The knitting screen appears on the Display.
※The stop screen locks the condition appearing on the Display.
Move the K-Carriage back and forth, you can knit Thread Lace pattern.



Number "1" of the pattern row reappears on the Display after knitting one complete pattern. Also ,the direction indication changes in reverse colour.



(1)Set the Change Knob to N.L. The Cam Buttons will be released automatically.
(2)Push both upper and lower Buttons (L) at the same time and align all the needles at B position.
Then continue knitting until you want to finish.

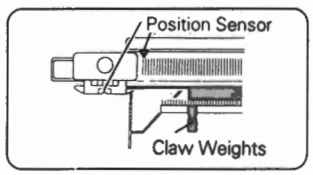


Slide the Cam Button Release Lever to the right to release the Cam Buttons.

TUCK STITCH PATTERN

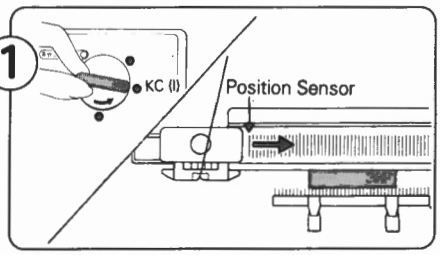
<Ex.> Pattern No.213

●BEFORE STARTING PATTERN KNITTING
① Enter the following programs on the CB-1.
(1)(PATTERN VARIATION)...All icons OFF.
(2)Select the icons as below:
(POSITIONING)→(PATTERN POSITION INPUT)→(K-CARRIAGE)→
(ALL OVER PATTERNING)→Pattern No.213 · Pattern Position L5
If a garment has been positioned, select (GARMENT POSITION CANCEL).
(3)(KNITTING)...While pushing the "0" key, push the ▽ Down key.
The screen returns to the start position.
Then, push ↵ key, and the stop screen appears.

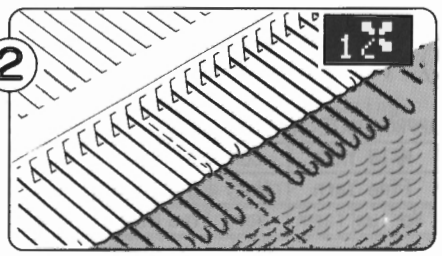


②Knit a few rows in stocking stitch and place the K-Carriage outside the left Position Sensor. Hang the Claw Weights evenly along the Cast-on Comb.

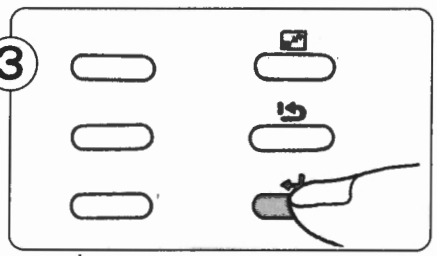
● PATTERN KNITTING



Set the Change Knob to KC(I). Move the K-Carriage slowly across the Position Sensor to knit one row.
※You only need to take the K-Carriage once outside the Position Sensor when you start pattern knitting.

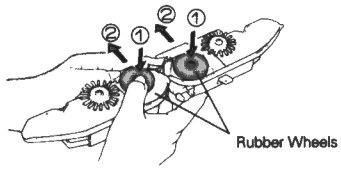


Place the K-Carriage outside the right Position Sensor.
The needles are selected.



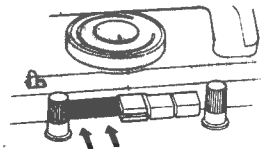
Push ↵ key on the CB-1 to cancel the stop screen. The knitting screen appears on the Display.
※The stop screen locks the condition appearing on the Display.

④



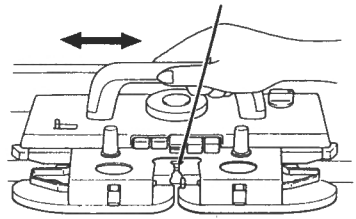
Remove the Sinker Plate Assembly from the K-Carriage and turn it over. Push the Rubber Wheels ① into working position ②, and attach the Sinker Plate Assembly back on the K-Carriage again.

⑤



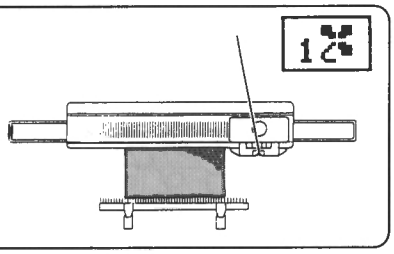
Push both TUCK Buttons at the same time.

⑥



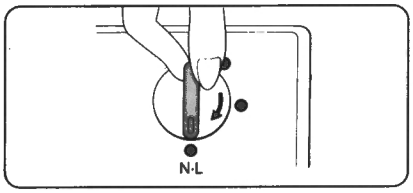
Moving the K-Carriage back and forth, you can knit Tuck Stitch pattern.

⑦

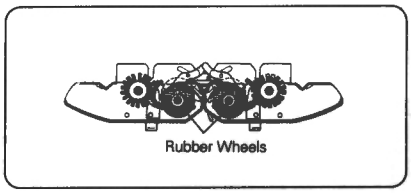


Number "1" of the pattern row reappears on the Display after knitting one complete pattern. Also ,the direction indication changes in reverse colour.

⑧ · You can either continue...
Repeat Steps ⑥ -⑦ ,
· Or finish pattern knitting...



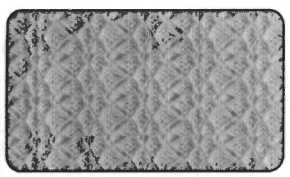
(1)Set the Change Knob to N.L. The Cam Buttons will be released automatically.



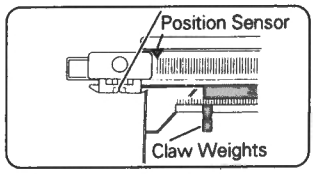
(2)Place the Rubber Wheels in non-working position.

OPEN TUCK STITCH PATTERN (TUCK LACE)

<Ex.> Pattern No.256



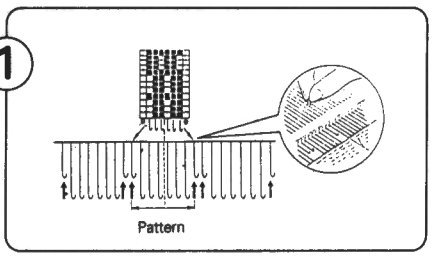
●BEFORE STARTING PATTERN KNITTING
①Enter the following programs on the CB-1.
(1)(PATTERN VARIATION)...All icons OFF.
(2)Select the icons as below:
(POSITIONING)→(PATTERN POSITION INPUT)→(K-CARRIAGE)→
(ALL OVER PATTERNING)→Pattern No.256 · Pattern Position L4
If a garment has been positioned, select (GARMENT POSITION CANCEL).
(3)(KNITTING)...While pushing the "0" key, push the ▽ Down key.
The screen returns to the start position.
Then, push ↵ key, and the stop screen appears.



②Knit a few rows in stocking stitch and place the K-Carriage outside the left Position Sensor. Hang the Claw Weights evenly along the Cast-on Comb.

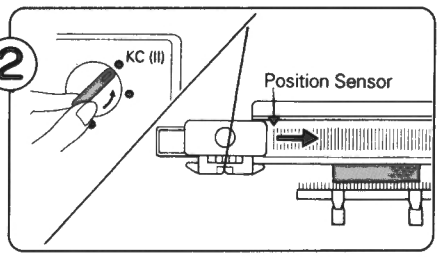
● PATTERN KNITTING

①



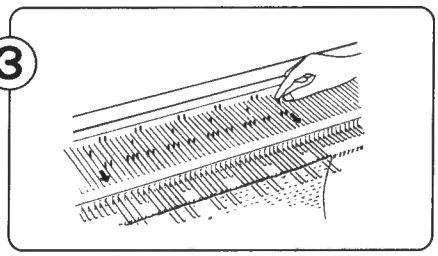
Bring the needles marked with "○" in the diagram in "STITCH WORLD III" forward to E position and back to A position. This will drop these stitches. If you were knitting a garment you can transfer the left marked stitch to the needles at its left side, and the right one out to the right.
Then take the empty needles back down to "A" position.

②



Set the Change Knob to KC(II). Move the K-Carriage slowly across the Position Sensor to knit one row.
※ You only need to take the K-Carriage once outside the Position Sensor when you start pattern knitting.

③



Follow the Steps ② - ⑤ on page 59 -60 , remembering to bring forward the end needles to D position every row, if they are not selected.
Move the K-Carriage back and forth to knit Open Tuck Stitch pattern.
※ Follow the Steps ⑦ - ⑧ above , remembering to bring forward the end needles to D position , if they are not selected.

NOTE:You can make a Braid using the Pattern No.665 in "STITCH WORLD III". Select to B position needles left (L) 5 to right (R) 6. Push needles (L) 1 & 2 and (R) 2 & 3 back down to A position. Cast on over the remaining needles. Follow the Steps of Open Tuck Stitch to knit Braid.

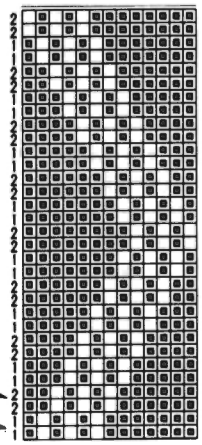
MULTI-COLOUR TUCK STITCH PATTERN

☆You can knit this pattern in the same way as knitting Tuck Stitch pattern, by changing the yarn according to the memo information.

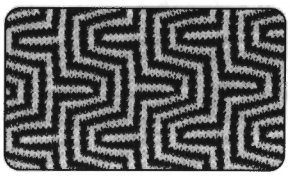
☆Pattern No.268 requires yarn in two colours(colour 1 and colour 2) and these are represented by the numbers 1 and 2 in the memo information. So, to start, decide which yarn corresponds to which number.

Memo Information in Tuck & Skip Patterns in STITCH WORLD III

The memo information is used to distinguish between different colour yarns in multi-colour pattern knitting.



<Ex.> Pattern No.268



●BEFORE STARTING PATTERN KNITTING

①Enter the following programs on the CB-1.

(1)(PATTERN VARIATION)...All icons OFF.

(2)Select the icons as below:

(POSITIONING)→(PATTERN POSITION INPUT)→(K-CARRIAGE)→

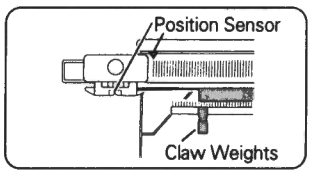
(ALL OVER PATTERNING)→Pattern No.268 · Pattern Position L6

If a garment has been positioned, select (GARMENT POSITION CANCEL).

(3)(KNITTING)...While pushing the "0" key, push the ▽ Down key.

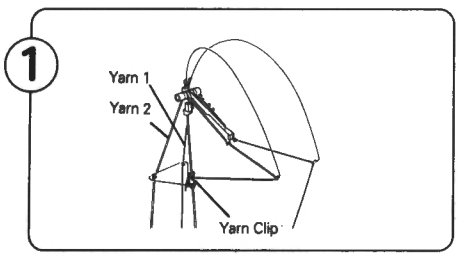
The screen returns to the start position.

Then, push ↵ key, and the stop screen appears.

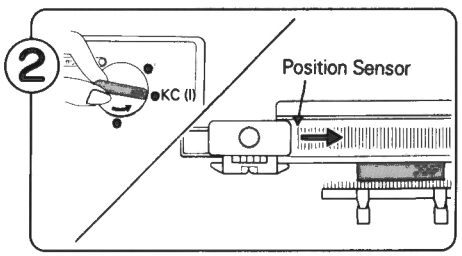


②Knit a few rows in stocking stitch and place the K-Carriage outside the left Position Sensor. Hang the Claw Weights evenly along the Cast-on Comb.

● PATTERN KNITTING

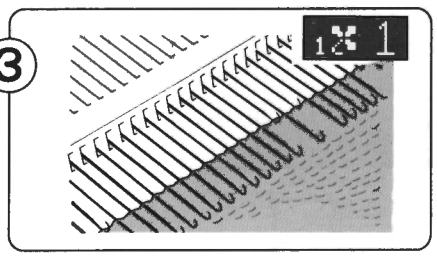


Thread Yarn 2 into the lefthand Yarn Tension Unit.



Set the Change Knob to KC(I). Move the K-Carriage slowly across the Position Sensor to knit one row.

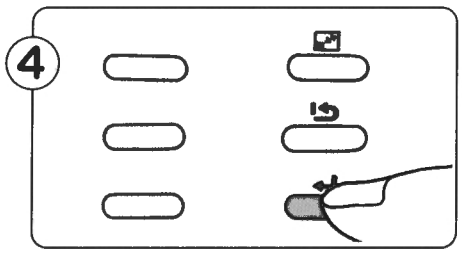
※You only need to take the K-Carriage once outside the Position Sensor when you start pattern knitting.



Place the K-Carriage outside the right Position Sensor.

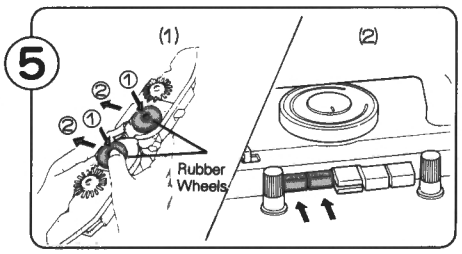
The needles are selected.

Number "1" in the memo tells you to knit with Yarn 1.



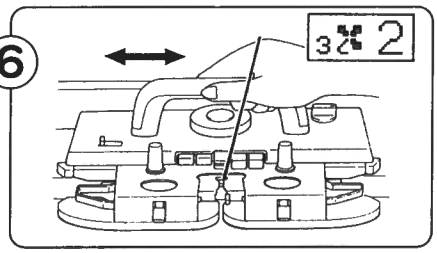
Push ↵ key on the CB-1 to cancel the stop screen. The knitting screen appears on the Display.

※The stop screen locks the condition appearing on the Display.



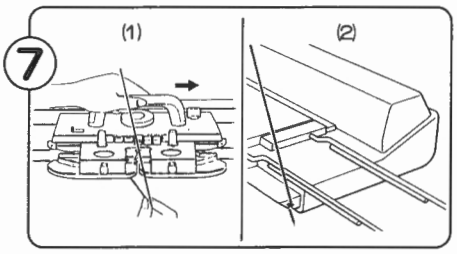
(1)Remove the Sinker Plate Assembly from the K-Carriage and turn it over. Push the Rubber Wheels ① into working position ②, and attach the Sinker Plate Assembly back on the K-Carriage again.

(2)Push both TUCK Buttons at the same time.

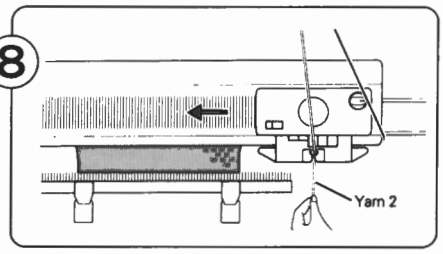


Move the K-Carriage back and forth until the number "2" appears in the memo.

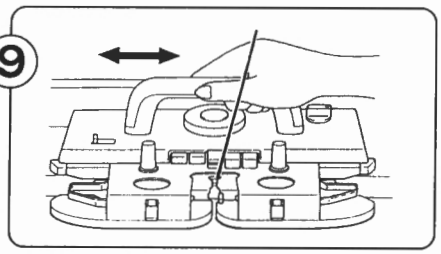
Number "2" in the memo tells you to knit the third row with Yarn 2.



(1)Take Yarn 1 out of Yarn Feeder "A". If you slide the K-Carriage slightly to the right the yarn can be removed easily.
(2)Hook Yarn 1 around the notch at the end of your machine.



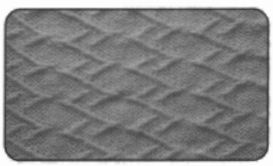
Thread Yarn 2 into Yarn Feeder "A" and continue knitting until Number "1" appears in the memo.



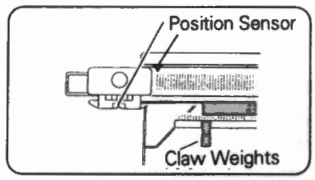
Continue knitting, changing the yarns according to the number in the memo. (When you change the yarns, take care not to cross them over each other.)
※ When you rethread the yarn into feeder "A" , knit the row holding it so that no loops form at the edge.
※Follow the Steps ⑦ - ⑧ on page 60.

SKIP STITCH PATTERN

<Ex.> Pattern No.311

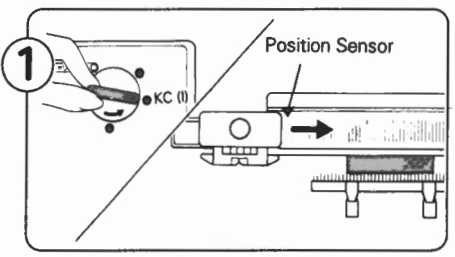


●BEFORE STARTING PATTERN KNITTING...
①Enter the following programs on the CB-1.
(1)(PATTERN VARIATION)...All icons OFF.
(2)Select the icons as below:
(POSITIONING)→(PATTERN POSITION INPUT)→(K-CARRIAGE)→
(ALL OVER PATTERNING)→Pattern No.311 · Pattern Position L5
If a garment has been positioned, select (GARMENT POSITION CANCEL).
(3)(KNITTING)...While pushing the "0" key, push the ▽ Down key.
The screen returns to the start position.
Then, push ↵ key, and the stop screen appears.

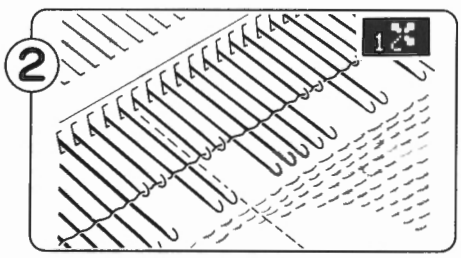


②Knit a few rows in stocking stitch and place the K-Carriage outside the left Position Sensor. Hang the Claw Weights evenly along the Cast-on Comb.

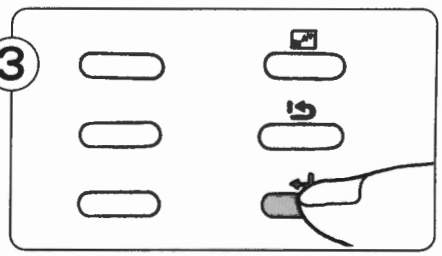
● PATTERN KNITTING



Set the Change Knob to KC(I). Move the K-Carriage slowly across the Position Sensor to knit one row.
※You only need to take the K-Carriage once outside the Position Sensor when you start pattern knitting.

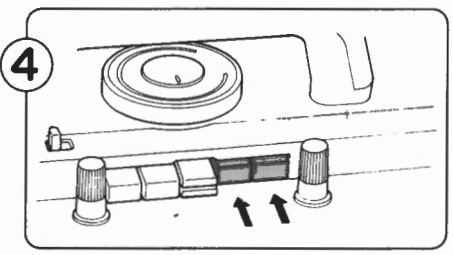


Place the K-Carriage outside the right Position Sensor.
The needles are selected.

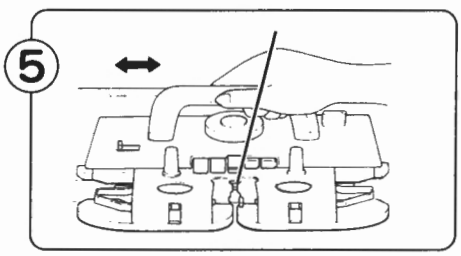


Push ↵ key on the CB-1 to cancel the stop screen. The knitting screen appears on the Display.

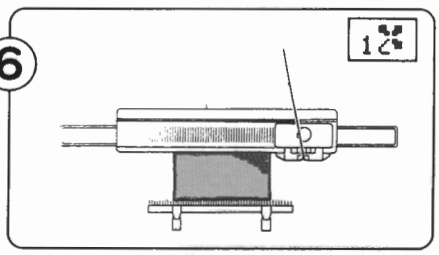
※The stop screen locks the condition appearing on the Display.



Push both PART Buttons at the same time.

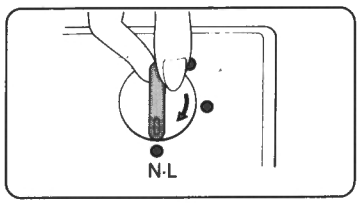


Moving the K-Carriage back and forth, you can knit Skip Stitch pattern.



Number "1" of the pattern row reappears on the Display after knitting one complete pattern. Also ,the direction indication changes in reverse colour.

⑦ · You can either continue...
Repeat Steps ⑤ -⑥ .
· Or finish pattern knitting...

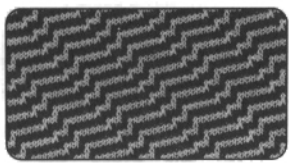


Set the Change Knob to N.L.
The Cam Buttons will be released automatically.

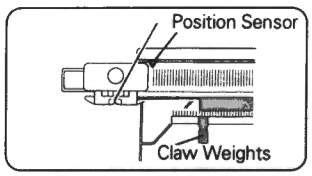
MULTI-COLOUR SKIP STITCH PATTERN (2-COLOURS)

☆This pattern is worked the same as Skip Stitch pattern, except the yarn is changed according to the numbers in the memo. (page 61)
☆Pattern No.331 requires yarn in two colours(colour 1 and colour 2) and these are represented by the Number 1 and 2 in the memo. So, to start, decide which yarn corresponds to which number.

<Ex.> Pattern No.331

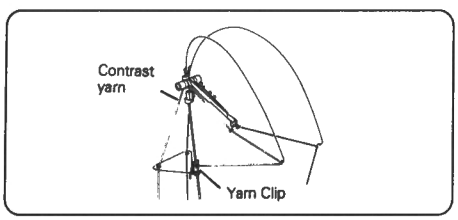


●BEFORE STARTING PATTERN KNITTING...
①Enter the following programs on the CB-1.
(1)(PATTERN VARIATION)...All icons OFF.
(2)Select the icons as below:
(POSITIONING)→(PATTERN POSITION INPUT)→(K-CARRIAGE)→
(ALL OVER PATTERNING)→Pattern No.331 · Pattern Position L6
If a garment has been positioned, select (GARMENT POSITION CANCEL).
(3)(KNITTING)...while pushing the "0" key, push the ▽ Down key.
The screen returns to the start position.
Then, push ↵ key, and the stop screen appears.



②Knit a few rows in stocking stitch and place the K-Carriage outside the left Position Sensor. Hang the Claw Weights evenly along the Cast-on Comb.

● PATTERN KNITTING



① Thread Yarn 2 into the lefthand Yarn Tension Unit.

② Follow Steps ① -④ on page 62.
Number "1" in the memo on the Display tells you to knit with the main yarn 1.

③ Follow Steps ⑥ - ⑨ on page 61.

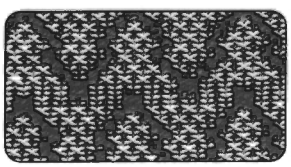
MULTI-COLOUR SKIP STITCH PATTERN When you use a single bed colour changer (KHC)

See page 88.

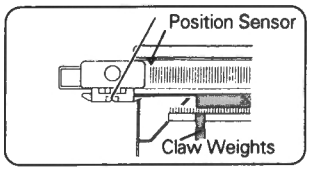
WEAVING PATTERN

☆The following pattern requires two types of yarn - the main yarn and the weaving yarn.
☆A better effect will result if you choose a weaving yarn that is thicker than the main yarn.

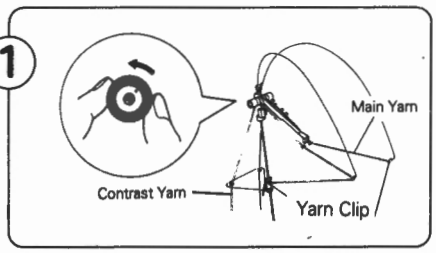
<Ex.> Pattern No.414



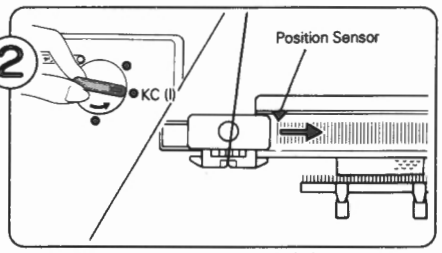
●BEFORE STARTING PATTERN KNITTING...
①Enter the following programs on the CB-1.
(1)(PATTERN VARIATION)...All icons OFF.
(2)Select the icons as below:
(POSITIONING)→(PATTERN POSITION INPUT)→(K-CARRIAGE)→
(ALL OVER PATTERNING)→Pattern No.414 · Pattern Position L6
If a garment has been positioned, select (GARMENT POSITION CANCEL).
(3)(KNITTING)...While pushing the "0" key, push the ▽ Down key.
The screen returns to the start position.
Then, push ↵ key, and the stop screen appears.



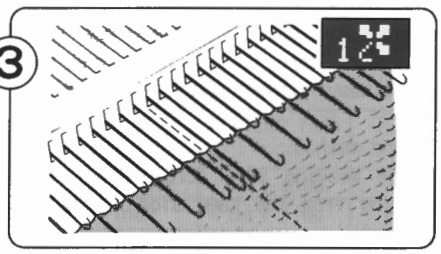
②Knit a few rows in stocking stitch and place the K-Carriage outside the left Position Sensor. Hang the Claw Weights evenly along the Cast-on Comb.

① 

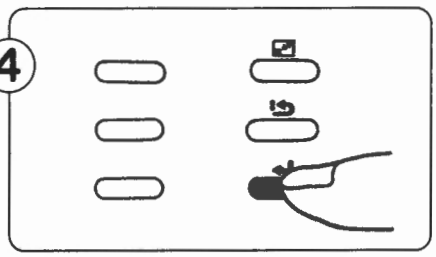
Thread the weaving yarn into the left Yarn Tension Unit. Adjust the Tension Disc according to the thickness of the weaving yarn.
※Adjust the Tension Disc to "–" and set the Tension Dial to bigger number when you use thick weaving yarn.

② 

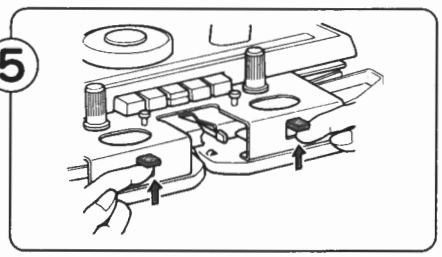
Set the Change Knob to KC(I).
Move the K-carriage from left to right across the left Position Sensor.
※You only need to take the K-Carriage once outside the Position Sensor when you start pattern knitting.

③ 

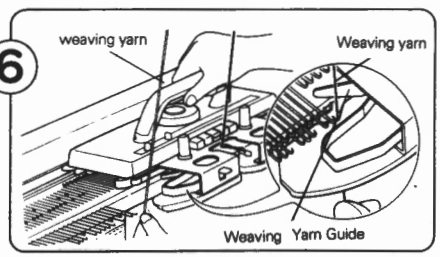
Place the K-Carriage outside the right Position Sensor.
The needles are selected.

④ 

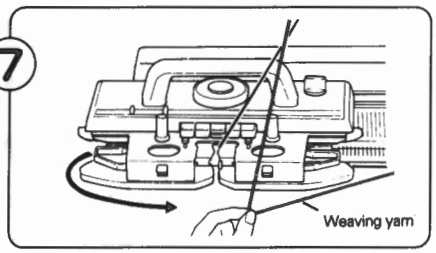
Push ↵ key on the CB-1 to cancel the stop screen. The knitting screen appears on the Display.
※The stop screen locks the condition appearing on the Display.

⑤ 

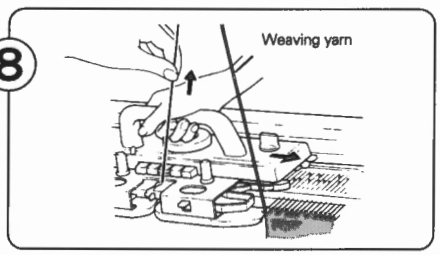
Set the Weaving Pattern Lever to W.T.

⑥ 

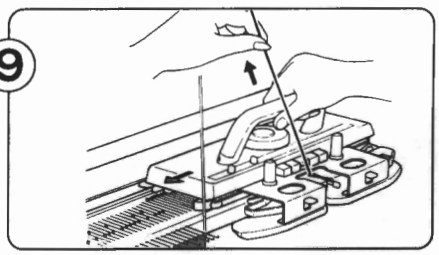
Holding the end of the weaving yarn with your left hand, thread it into the Weaving Yarn Guide on the left side of the K-Carriage. Then move the K-Carriage across the needlebed.
※Release the yarn end after knitting one row.

⑦ 

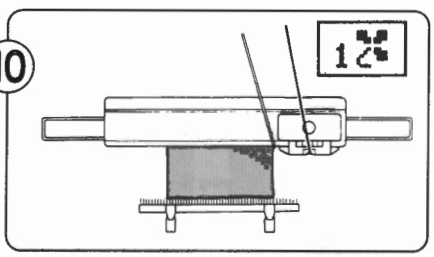
Remove the weaving yarn from the left Weaving Yarn Guide by moving the K-Carriage slightly to the left. Pass the weaving yarn under the K-Carriage to the right Weaving Yarn Guide.

⑧ 

Move the K-Carriage to the right, pulling the main yarn upwards slightly – ensure that the weaving yarn is in the right side.

⑨ 

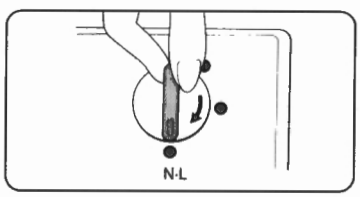
Continue knitting, at the same time placing the weaving yarn into the left or right Weaving Yarn Guide according to the direction of the K-Carriage, and pulling the main yarn upwards slightly.

⑩ 

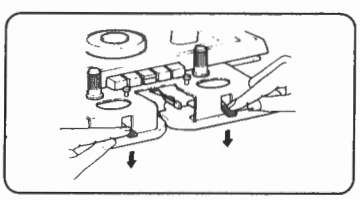
Number "1" of the pattern row reappears on the Display after knitting one complete pattern. Also, the direction indication changes in reverse colour.

⑪ · You can either continue...
Repeat Steps ⑨ -⑩ .

· Or finish pattern knitting...



(1)Set the Change Knob to N.L.

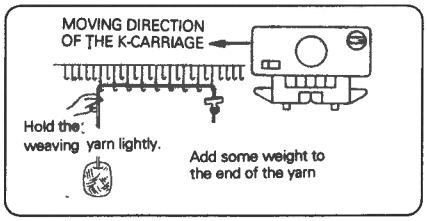


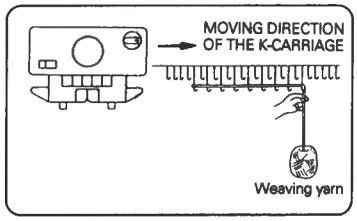
(2)Set the Weaving Pattern Levers to N.

WHEN USING MORE THAN TWO WEAVING YARNS...

Change the weaving yarns according to the number in the memo on the Display.
There are two ways to weave - one is to change the yarn in the Yarn Tension Unit, and the other is to lay the weaving yarn across the needles by hand.

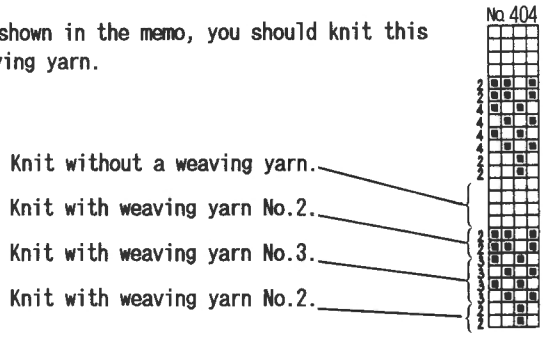
・Second method...
Lay the weaving yarn across the selected needles, beginning from the same side as the K-Carriage, as illustrated.





Memo Information in Weaving Pattern in STITCH WORLD III

・The memo information is used to distinguish between the weaving yarn.
・When no number is shown in the memo, you should knit this row without a weaving yarn.



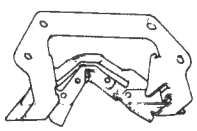
PLATING

☆With the Plating Yarn Feeder, you can use two yarns to knit a reversible fabric, with one colour on the right side and the other on the wrong side. The main yarn will be on the front (plain) side of the knitting and the plating yarn will be on the reverse (purl) side.

・Prepare two yarns - use fine or very fine yarn.

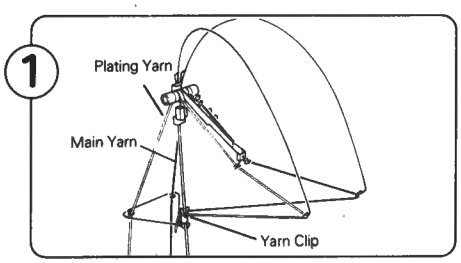
Front(Plain)

Reverse(Purl)

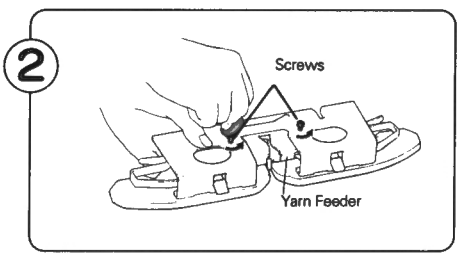

Plating Yarn Feeder

●BEFORE STARTING PLATING KNITTING
・Enter the following programs on the CB-1.
(1)If a pattern has been positioned, select (PATTERN POSITION CANCEL).
If a garment has been positioned, select (GARMENT POSITION CANCEL).
(2)(KNITTING)...While pushing the "0" key, push the ▽ Down key. Push ↵ key, and the stop screen appears.

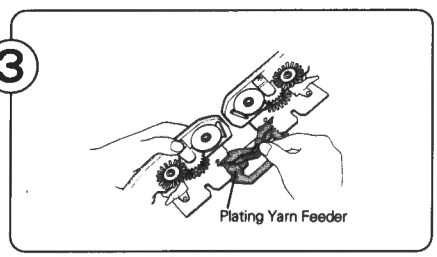
● PLATING KNITTING



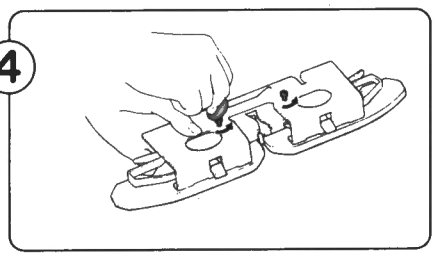
Thread the main yarn into the right Yarn Tension Unit and the contrast yarn into the left.



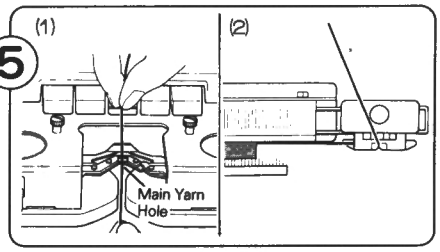
Remove the two screws and the Yarn Feeder from the Sinker Plate Assembly.
※Be sure to keep the screws safe.



Take the Plating Yarn Feeder out of the Accessory Box and fit it into the Sinker Plate Assembly as shown above.



Fasten two screws. Set the Sinker Plate Assembly back on the K-Carriage.

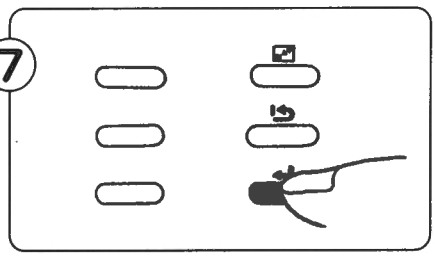


(1)Thread the main yarn into the Main Yarn Feeder.
(2)Knit a few rows in stocking stitch. Place the K-Carriage outside the right Position Sensor.

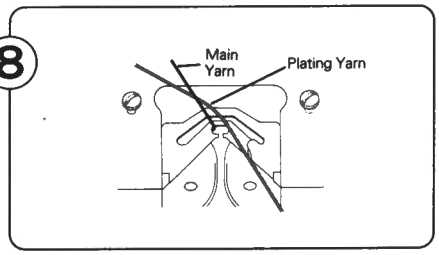
⑥ Set the Tension Dial according to the yarn you use.

APPROXIMATE TENSION CHART

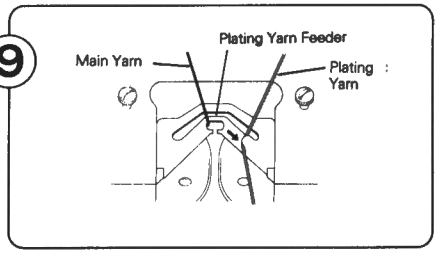
MAIN YARN	PLATING YARN	TENSION DIAL
Very fine	Very fine	4 - 5
Fine	Very fine	6 - 7
Fine	Fine	8 - 9



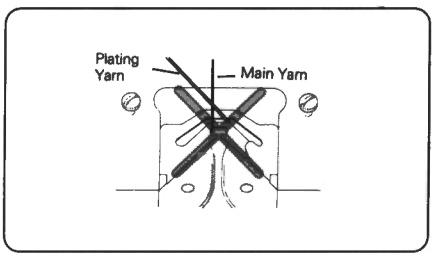
Push ↵ key to cancel the stop screen. The knitting screen appears.
※The stop screen locks the number of the row counter.



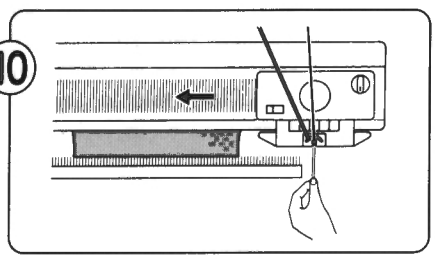
Pass the plating yarn behind the main yarn.



Now thread the plating yarn into the Plating Yarn Feeder. (You can pass the plating yarn through the slit.)



※ Make sure the two yarns are not crossed.



Holding the end of the plating yarn by hand, move the K-Carriage one row. Once the needles have caught the yarn, you can release the yarn end. Continue knitting.

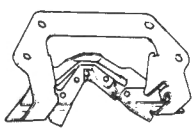
CHANGING THE MAIN YARN AND THE PLATING YARN

☆You can change the main and plating yarn midway through your knitting.

・Prepare two very fine yarns.

Front(Plain)

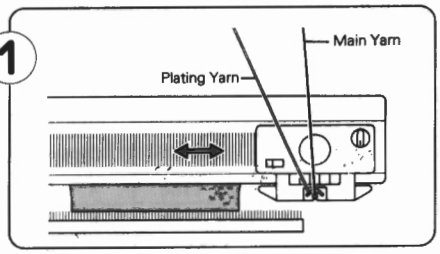
Reverse(Purl)



Plating Yarn Feeder

●BEFORE STARTING PLATING KNITTING
・Enter the following programs on the CB-1.
(1)If a pattern has been positioned, select (PATTERN POSITION CANCEL).
If a garment has been positioned, select (GARMENT POSITION CANCEL).
(2)(KNITTING)...While pushing the "0" key, push the ▽ Down key. Push ↵ key, and the stop screen appears.

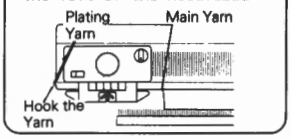
● PLATING KNITTING

① 

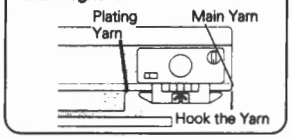
Follow the Steps given for Plating and continue knitting until you want to change the yarn.

② To change the yarn, do as follows:

When the K-Carriage is on the left of the needlebed

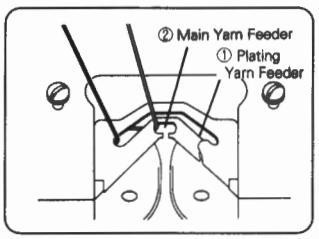


When the K-Carriage is on the right of the needlebed



(1)

① Take the yarn out of the Main Yarn Feeder.
② Take the yarn out of the Plating Yarn Feeder.
- Hook the yarn in the right Yarn Tension Unit into the righthand notch.
- Hook the yarn in the left Yarn Tension Unit into the lefthand notch.



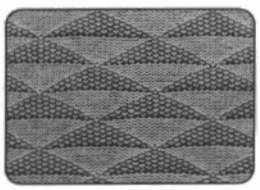
(2)Thread up the Plating Yarn Feeder and then the Main Yarn Feeder.

③ Continue knitting, changing the yarn when you wish.

PLATED TUCK STITCH PATTERN

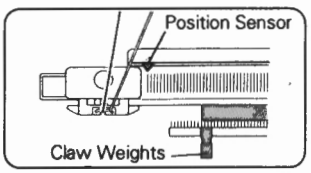
☆ You can knit this pattern in the same way as knitting Tuck Stitch pattern, with the Plating Yarn Feeder and two yarns.

<Ex.> Pattern No.283



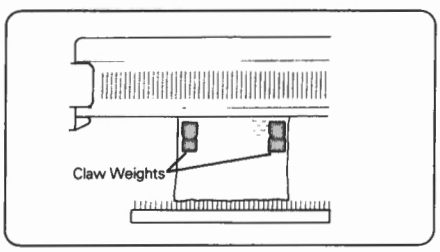
●BEFORE STARTING PLATING KNITTING

①Enter the following programs on the CB-1.
(1)(PATTERN VARIATION)...All icons OFF.
(2)Select the icons as below:
(POSITIONING)→(PATTERN POSITION INPUT)→(K-CARRIAGE)→
(ALL OVER PATTERNING)→Pattern No.283 · Pattern Position L10
If a garment has been positioned, select (GARMENT POSITION CANCEL).
(3)(KNITTING)...While pushing the "0" key, push the ▽ Down key.
The screen returns to the start position.
Then, push ↵ key, and the stop screen appears.



②Knit a few rows in stocking stitch and place the K-Carriage outside the left Position Sensor. Hang on the Claw Weights evenly along the Cast-on Comb.

● PATTERN KNITTING



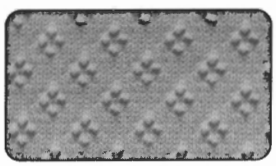
Continue knitting, following instructions for Tuck Stitch pattern.
(Refer to page 59.)

※ Rehang the Claw Weights every 20 rows or so.

LACE PATTERN OR FINE LACE PATTERN - All over pattern knitting

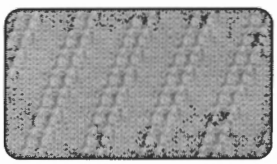
☆With the L-Carriage you select and transfer stitches automatically. You can knit Lace and Fine Lace patterns, by changing the setting of the Lace Change Lever.

· LACE PATTERN



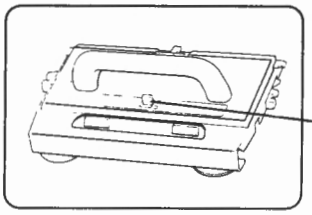
<EX.> Pattern No.165

· FINE LACE PATTERN



<Ex.> Pattern No.181

● LACE-CARRIAGE (L-CARRIAGE)

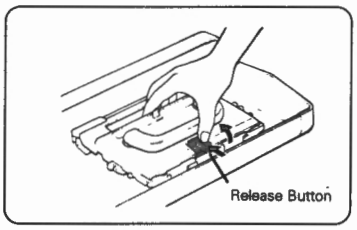


〈 Lace Change Lever 〉

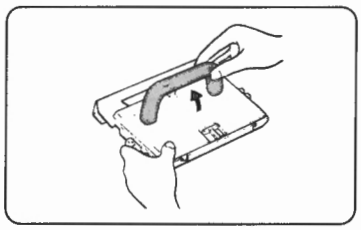
N-Normal Lace pattern knitting

F-Fine Lace pattern knitting

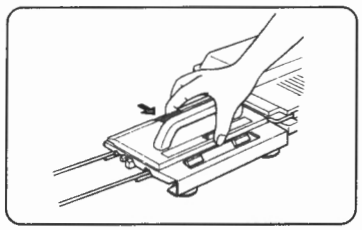
● HOW TO SET THE L-CARRIAGE



①Remove the L-Carriage by pushing the Release Button.



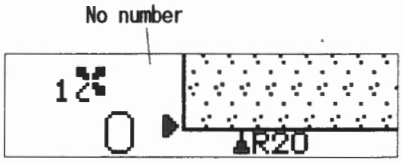
②Raise the L-Carriage Handle.



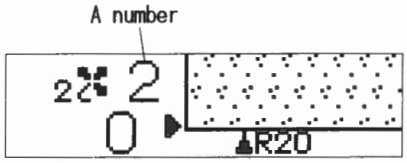
③Push the Release Button and place the L-Carriage securely on the left Extension Rail.

● MEMO INFORMATION FOR LACE PATTERN OR FINE LACE PATTERN

Operate the L-Carriage and the K-Carriage according to the memo on the Display.



If no number appears in the memo, operate the L-Carriage until a number shows in the memo.



When a number appears, knit as many rows with the K-Carriage as the number in the memo, then operate the L-Carriage.

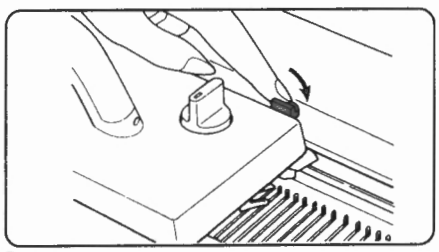
●BEFORE STARTING PATTERN KNITTING

①Enter the following programs on the CB-1.
(1)(PATTERN VARIATION)...All icons OFF.
(2)Select the icons as below:
(POSITIONING)→(PATTERN POSITION INPUT)→(L-CARRIAGE)→(ALL OVER PATTERNING)→
Pattern No.165 ・Pattern Position L4
If a garment has been positioned, select (GARMENT POSITION CANCEL).
(3)(KNITTING)...While pushing the "0" key, push the ▽ Down key.
The screen returns to the start position.
Then, push ↵ key, and the stop screen appears.

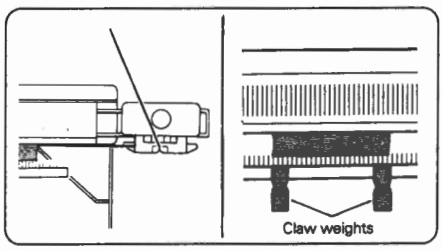
②Set the Tension Dial according to the yarn you use.

APPROXIMATE TENSION CHART

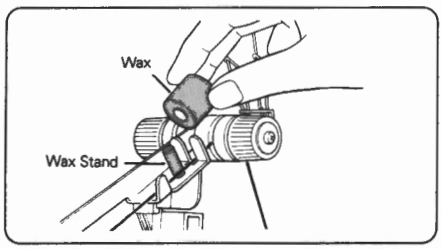
Very fine yarn (1/2 ply)	4-5
Fine yarn (2/3 ply)	4-5
Medium yarn (3/4 ply)	5-6



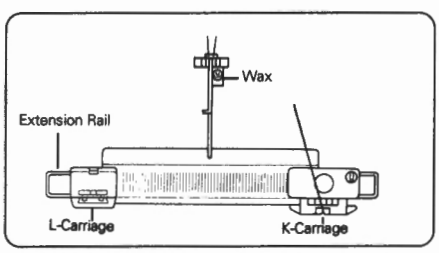
③ Set the Row Counter Tripper into working position.



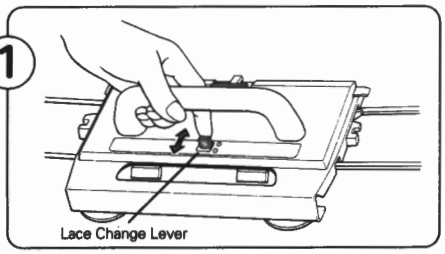
④Knit a few rows in stocking stitch and place the K-Carriage on the right Extension Rail.
Hang the Claw Weights evenly along the Cast-on Comb.



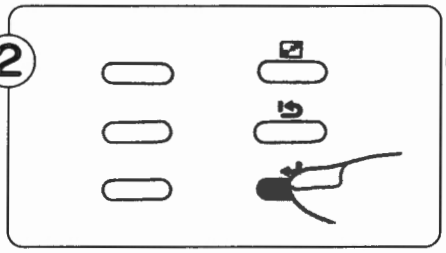
⑤Take the Wax out of the Wax Case and place it on the Wax Stand.
※You need to use the Wax when you are knitting Lace or Fine Lace patterns.



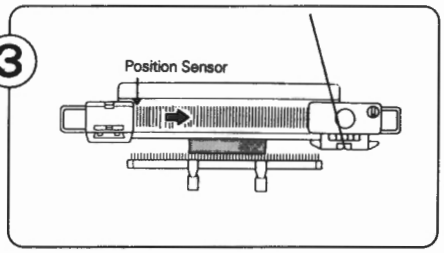
⑥Place the L-Carriage on the left Extension Rail.

① 

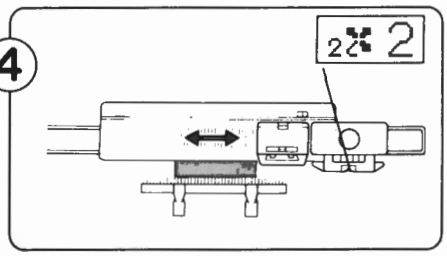
Set the Lace Change Lever to either N or F according to the pattern you are going to knit.

② 

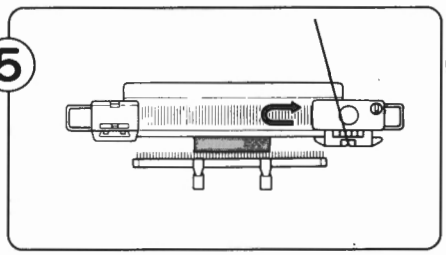
Push ↵ key on the CB-1 to cancel the stop screen. The knitting screen appears on the Display.
※The stop screen locks the condition appearing on the Display.

③ 

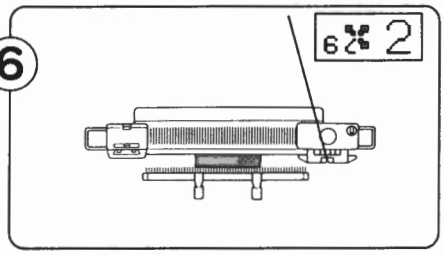
Move the L-Carriage from outside the left Position Sensor to the right.
※You only need to take the L-Carriage once outside the Position Sensor when you start pattern knitting.

④ 

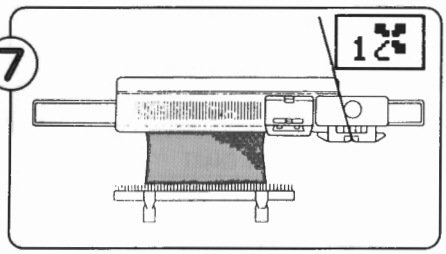
Operate the L-Carriage back and forth across the knitting until the number "2" appears in the memo.

⑤ 

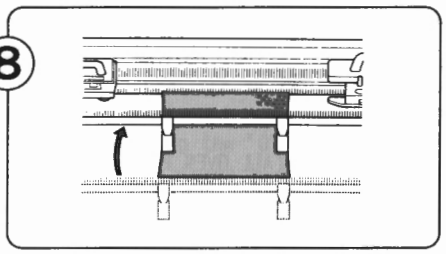
Knit two rows with the K-Carriage.

⑥ 

Operate the L-Carriage until a number appears in the memo.
Operate the K and L-Carriages according to the memo information.

⑦ 

Number "1" of the pattern row reappears on the Display after knitting one complete pattern.

⑧ 

Rehang the Cast-on Comb and Claw Weights if the knitting becomes too long.

⑨
- You can either continue...
  Repeat Steps ⑥ -⑧ .
- Or finish pattern knitting...
  Push ↵ key, and the stop screen appears.
  Knit as many rows as you wish in stocking stitch.

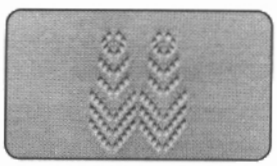
When you finish "STITCH WORLD III" Pattern No.176, proceed as follows:

1)Knit 2 rows with the K-Carriage.
2)Set the Lace Change Lever to F.
3)Operate the L-Carriage four times.
4)Knit as many rows as you desire in stocking stitch.

LACE PATTERN OR FINE LACE PATTERN - Motif knitting

☆The procedure is the same as that for "All over pattern knitting" except the following programs.

<Ex.> Pattern No.133



●BEFORE STARTING PATTERN KNITTING
①Enter the following programs on the CB-1.
(1)(PATTERN VARIATION)...All icons OFF.
(2)Select the icons as below:
(POSITIONING)→(PATTERN POSITION INPUT)→(L-CARRIAGE)→(MOTIF PATTERNING)→
Pattern No.133 · Number of Repeats 2 · Pattern Position L12 in Motif No.1 →(END)
If a garment has been positioned, select (GARMENT POSITION CANCEL).
(3)(KNITTING)...While pushing the "0" key, push the ▽ Down key.
The screen returns to the start position.
Then, push ↵ key, and the stop screen appears.

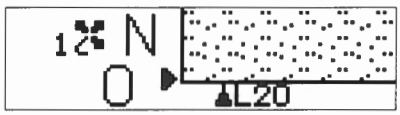
②Follow Steps ② - ⑥ of BEFORE STARTING PATTERN KNITTING on page 68.

· Follow Steps ① -⑧ on this above instructions.

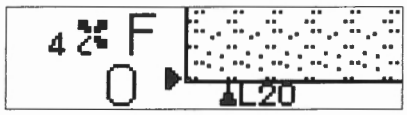
LACE AND FINE LACE MIXED

● MEMO INFORMATION FOR LACE AND FINE LACE MIXED

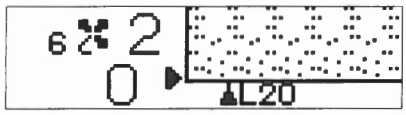
Use the L-Carriage and the K-Carriage according to the memo on the Display.



N:Set the Lace Change Lever to N and operate the L-Carriage until the indication in the memo changes.

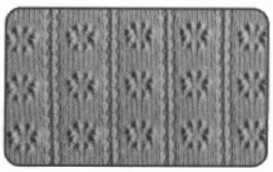


F:Set the Lace Change Lever to F and operate the L-Carriage until the indication in the memo changes.



2-8:When a number appears in the memo...Knit as many rows with the K-Carriage as the number in the memo and then operate the L-Carriage.

<Ex.> Pattern No.199



●BEFORE STARTING PATTERN KNITTING

①Enter the following programs on the CB-1.

(1)(PATTERN VARIATION)...All icons OFF.

(2)Select the icons as below:

(POSITIONING)→(PATTERN POSITION INPUT)→(L-CARRIAGE)→(ALL OVER PATTERNING)→

Pattern No.199 · Pattern Position L6

If a garment has been positioned, select (GARMENT POSITION CANCEL).

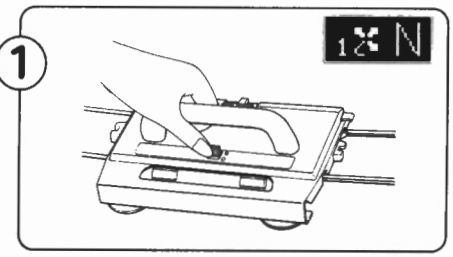
(3)(KNITTING)...While pushing the "0" key, push the ▽ Down key.

The screen returns to the start position.

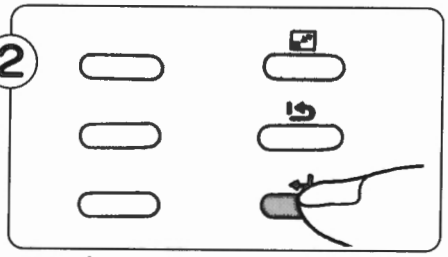
Then, push ↵ key, and the stop screen appears.

②Follow Steps ② - ⑥ of BEFORE STARTING PATTERN KNITTING on page 68.

● PATTERN KNITTING

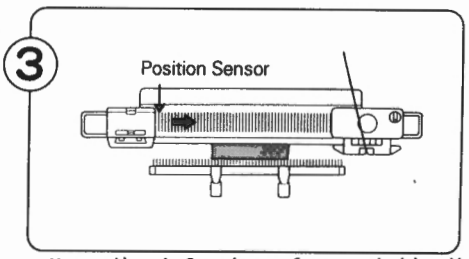


Set the Lace Change Lever to N which corresponds to the indication "N" in the memo.



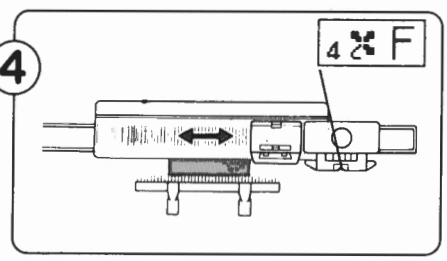
Push ↵ key on the CB-1 to cancel the stop screen. The knitting screen appears on the Display.

※The stop screen locks the condition appearing on the Display.

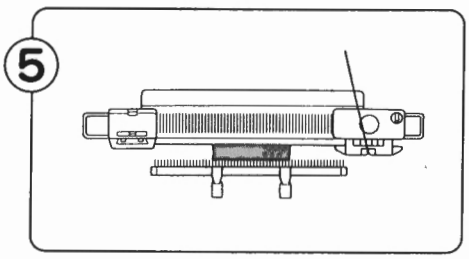


Move the L-Carriage from outside the left Position Sensor to the right.

※You only need to take the L-Carriage once outside the Position Sensor when you start pattern knitting.



Operate the L-Carriage back and forth across the knitting until the indication in the memo changes.



Operate the K and L-Carriages according to the memo.

⑥ Follow Steps ⑦ - ⑨ of PATTERN KNITTING on page 69.

MULTI-COLOUR RIB PATTERN - Jacquard

Refer to page 91.

TENSION SQUARE

WHAT IS TENSION SQUARE…

The tension square is the basis for calculating the number of stitches and rows required. The swatch is a sample piece knitted in exactly the same way as the finished garment.

· There are three kinds of tension squares in the computer. Decide which tension square you are going to knit.

40×60 (40 stitches x 60 rows)	is recommended for medium or fine yarn.
20×30 (20 stitches x 30 rows)	is recommended for thick yarn.
10cm (10 cm x 10 cm)	is recommended for stocking stitch or pattern of which you can easily count the numbers of stitches and rows.

●HOW TO MAKE A TENSION SQUARE

1.Enter the following programs on the CB-1.

(1) (PATTERN VARIATION)...Select variations if necessary.

(2) (POSITIONING) → (PATTERN POSITION INPUT)...Position pattern as required on garment.

※When you knit in stocking stitch , delete positioned pattern in (PATTERN POSITION CANCEL).

(3) If a garment has been positioned , select (GARMENT POSITION CANCEL).

(4) (KNITTING) → While pushing the "0" key, push the ▽ Down key. Then, push ↵ key, and the stop screen appears.

2.Cast-on with required needles as shown in the following figures.

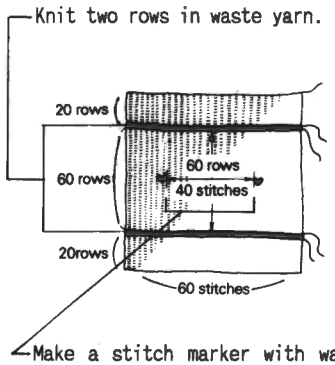
3.Set the Carriage according to the pattern you are going to knit.

*Refer to PATTERN KNITTING.

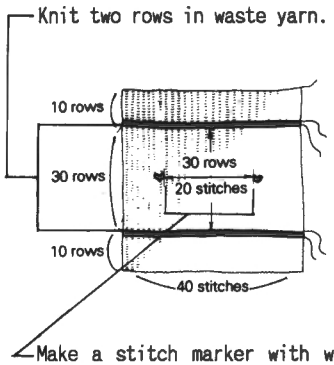
4.Push ↵ key to return to the knitting screen.

5.Continue knitting according to each figure of tension squares.

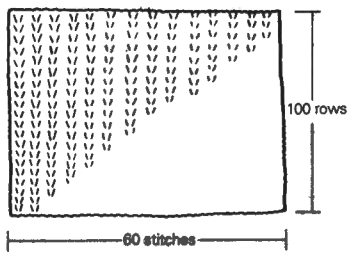
40×60 40 stitches x 60 rows



20×30 20 stitches x 30 rows



10cm 10 cm x 10 cm(4" x 4")

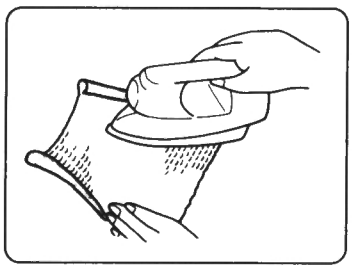


Work the tension square over not less than 40 stitches and 60 rows with thick yarn.

Work the tension square over not less than 60 stitches and 100 rows with medium or fine yarn.

6.Press the tension square.

After releasing from the machine the tension square is often stretched sideways, pull it lengthwise 2 or 3 times to release stretch. Pat the square lightly with your palm to make it even. Press it according to the yarn label on a blocking surface. Leave it for 4 or 5 hours(preferably overnight) to give the yarn time to settle.



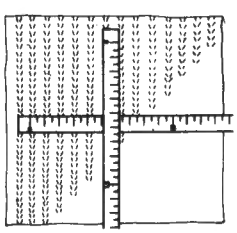
7.Measure the tension square. Lay the tension square on a flat surface. Taking care not to squash or stretch it, measure it.

40×60, 20×30 40 stitches x 60 rows/20 stitches x 30 rows

(1)Measure the width of 40(20) stitches (between the 2 waste yarn stitches).

(2)Measure the length of 60(30) rows (between rows knitted in waste yarn).

10cm 10 cm x 10 cm (4" x 4")



Make out 10cm(4") square in the centre using a ruler and pins.

Count the number of stitches and rows for 10cm(4").

NOTE:Enter the measured numbers of stitches and rows in GARMENT POSITION INPUT.

HOW TO SHAPE A NECKLINE

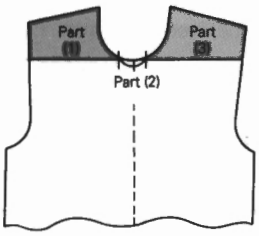
WHEN USING GARMENT POSITION INPUT... The indication of "KNIT ONE SIDE" appears on the Display during knitting.

HOW TO SHAPE ROUND NECKLINE *The following numbers are used as an example. You can change the indications by ◪ key.

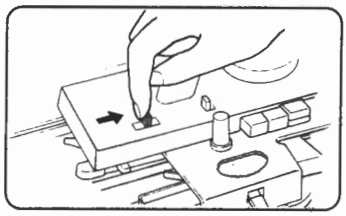
1.STOCKING STITCH AND PLATING

(Using the Holding Cam Lever)

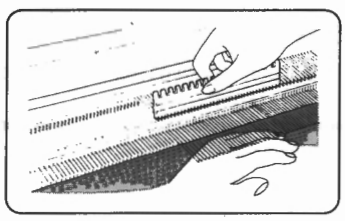
· The following example begins with the yarn and K-Carriage at the left. Reverse (e.g. read left for right) if beginning with yarn and K-Carriage at the right.



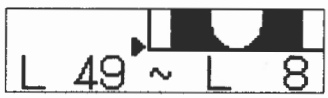
①"KNIT ONE SIDE" with the sound "beep" appears when you need to knit separately. Select (L), and push ↵ key. On the K-Carriage, set the Holding Cam Lever to H. Place the K-carriage outside the left Position Sensor.



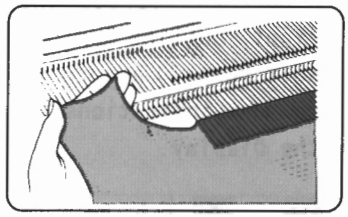
②Knitting width for Part(1) appears. Leave the needles shown on the Display in B position. Using the flat side of the 1 x 1 Needle Pusher, bring the needles for Parts(2) and (3) forward to E position. (These needles will not be knitted).



③Push ↵ key, and the knitting screen reappears. Move the K-Carriage across the left Position Sensor. Knit Part(1) according to the indication of knitting width.

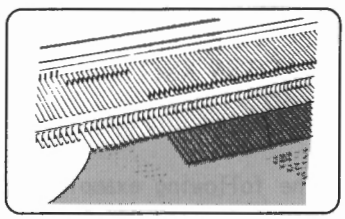


④ Knit till you hear the sound "beep". Knit one more row, "KNITTING COMPLETED" appears on the Display. Take Part(1) off the machine and return the needles for Part(1) back to A position.

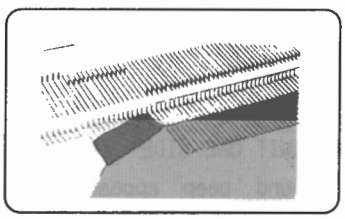


⑤ Push ↵ key, "KNIT ONE SIDE" reappears. Select (R), and push ↵ key.

⑥ Knitting width for Part(3) appears. Leave the needles for Part(3) in E position. Bring the needles for Part(2) back to B position, by replacing the stitches into the needle hook using the Transfer Tool.

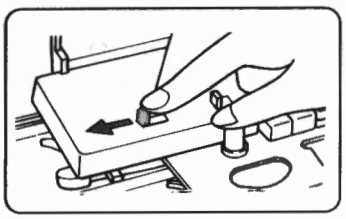


⑦ Waste knit Part(2) and take it off the machine. Return the needles for Part(2) back to A position. Now only the needles for Part(3) are left in E position. Place the K-Carriage outside the right Position Sensor.



※ If you have knitted Part(3) first, place the K-Carriage outside the left Position Sensor.

⑧ Set the Holding Cam Lever on the K-Carriage to N. Push ↵ key, and the knitting screen appears. Thread up the yarn into the Yarn Feeder. Move the K-Carriage across the right Position Sensor. Knit Part(3) according to the indications on the Display.

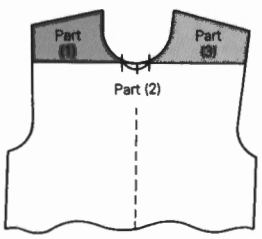


⑨ Knit till you hear the sound "beep". Knit one more row, "KNITTING COMPLETED" appears on the Display. The neckline shaping has now been completed.

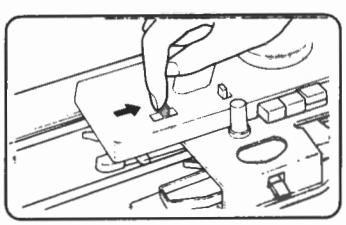
⑩ Push ↵ key, and the indication returns to the start position.

2. PATTERN KNITTING (Using the Holding Cam Lever)

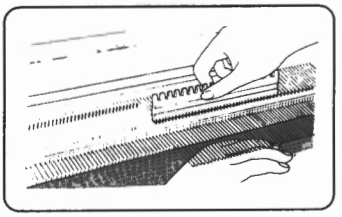
· The following example begins with the yarn and K-Carriage at the left. Reverse (e.g. read left for right) if beginning with yarn and K-Carriage at the right.



①"KNIT ONE SIDE" with the sound "beep" appears when you need to knit separately. Select (L), and push ↵ key. On the K-Carriage, set the Holding Cam Lever to H. Place the K-Carriage outside the left Position Sensor.

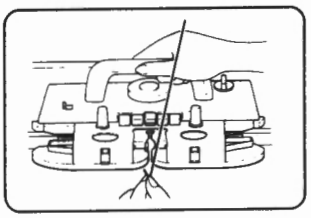


② Knitting width for Part(1) appears. Leave the needles shown on the Display in B position. Using the flat side of the 1 x 1 Needle Pusher, bring the needles for Parts(2) and (3) forward to E position. (These needles will not be knitted).

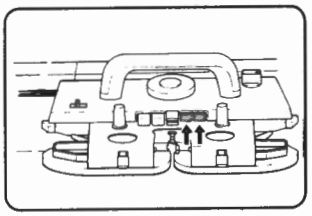


NOTE: IF THE SELECTED NEEDLES ARE PUSHED BACK BY MISTAKE...

1. Bring all the needles back to B position and take the yarn out of the Yarn Feeder. Make sure the K-Carriage is placed outside the Position Sensor opposite the yarn.



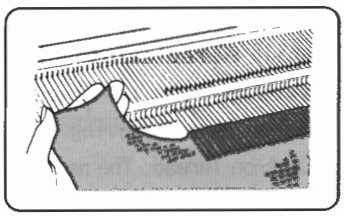
2. To select the needles, push both PART Buttons and set the Change Knob to KC(I) or KC(II). Move the K-Carriage across the knitting while the stop screen is on the Display.



3. Rethread the yarn to the Yarn Feeder. Push the Cam Button according to your pattern.

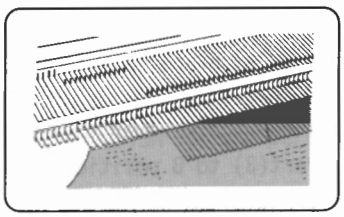
③ Push ↵ key, and the knitting screen reappears. Move the K-Carriage across the Position Sensor. Knit Part(1) according to the indication of knitting width.

④ Knit till you hear the sound "beep". Knit one more row, "KNITTING COMPLETED" appears on the Display.
Take Part(1) off the machine and return the needles for Part(1) back to A position.

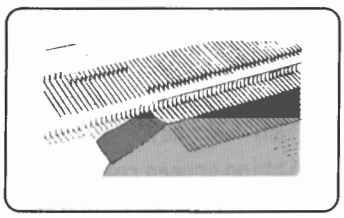


⑤ Push ↵ key, and "KNIT ONE SIDE" reappears. Select (R), and push ↵ key.

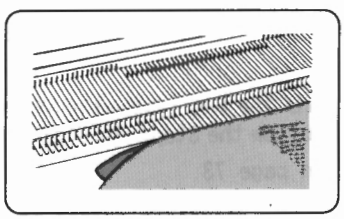
⑥ Knitting width for Part(3) appears.
※Make sure the stop screen is showing.
Leave the needles for Part(3) in E position. Bring the needles for Part(2) back to B position, by replacing the stitches into the needle hook using the Transfer Tool.



⑦ Set the Change Knob to N.L. Waste knit Part(2) and take it off the machine. Return the needles for Part(2) back to A position. Now only the needles for Part(3) are left in E position.

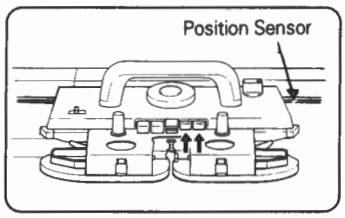


⑧ Place the K-Carriage outside the left Position Sensor. Bring these needles back to B position, in the same way as you did for Part(2).



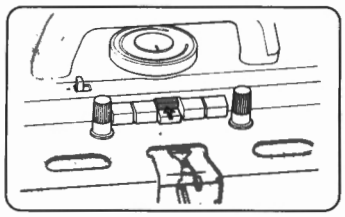
※If you have knitted Part(3) first, place the K-Carriage outside the right Position Sensor.

⑨ Push both PART Buttons at the same time. Set the Change Knob to KC(I) or KC(II).
Move the K-Carriage from left to right across the left Position Sensor. The needles are selected.



⑩ Push ↵ key, and the knitting screen reappears on the Display.

⑪ Push the Cam Buttons according to pattern. Knit Part(3) according to the indication on the Display.

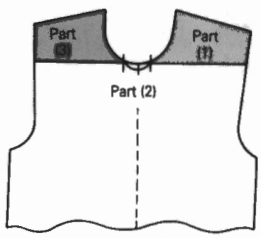


⑫ Follow Steps ⑨ - ⑩ of STOCKING STITCH AND PLATING on page 73.

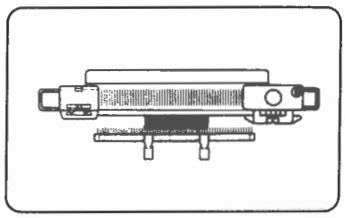
3. LACE OR FINE LACE PATTERN

(Using the Cast-on Thread)

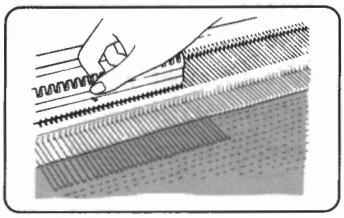
· When shaping a neckline in Lace pattern, the computer selects the right side to knit first.



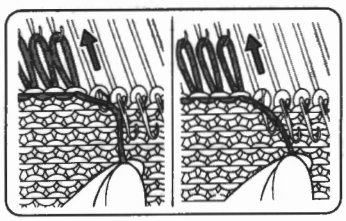
①"KNIT ONE SIDE" with the sound "beep" appears when you need to knit separately. Select (R), and push ↵ key. Place the K-Carriage outside the right Position Sensor and the L-Carriage outside the left Position Sensor.



② Knitting width for Part(1) appears. Leave the needles shown on the Display in B position. Using the flat side of the 1 x 1 Needle Pusher, bring the needles for Parts(2) and (3) forward to E position.

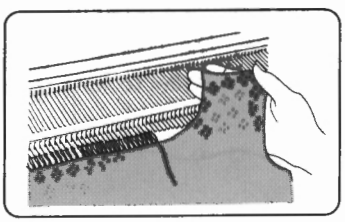


③ Hang the Cast-on Thread over the hooks of the needles in E position, and knit them back to A position by hand. (These needles in A position will not be knitted.)



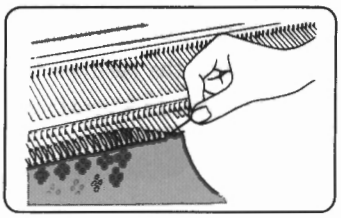
④ Push ↵ key, and the knitting screen appears. Knit Part(1) according to the indications on the Display using both L and K Carriages.

⑤ Knit till you hear the sound "beep". Knit one more row, "KNITTING COMPLETED" appears on the Display.
Take Part(1) off the machine and return the needles for Part(1) back to A position.

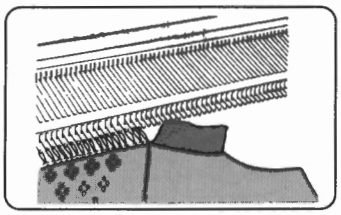


⑥ Push ↵ key, and "KNIT ONE SIDE" reappears. Select (L), and push ↵ key.

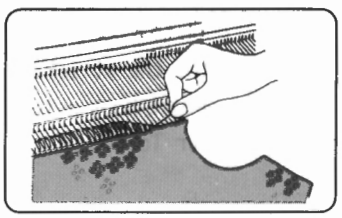
⑦ Knitting width for Part(3) appears.
Bring the needles for Part(2) from A to B position, while replacing the stitches into the needles hooks and removing the Cast-on Thread. The needles for Part(3) are still left in A position.



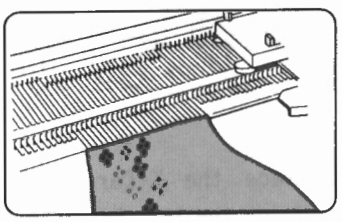
⑧ Waste knit Part(2) and take it off the machine. Return the needles back to A position. Place the K-Carriage outside the right Position Sensor and the L-Carriage outside the left Position Sensor.



⑨ Bring the needles for Part(3) to B position, in the same way as you did for Part(2).



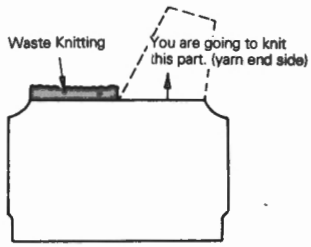
⑩ Push ↵ key, and the knitting screen reappears. Thread up the yarn into the Yarn Feeder. Knit Part(3) according to the indications on the Display, using the K and L Carriages.



⑪ Follow the Steps ⑨ - ⑩ of STOCKING STITCH AND PLATING on page 73.

HOW TO SHAPE A V-NECKLINE (Taking part of the knitting off on waste yarn)

· When using the holding position to divide your knitting (e.g. for a V-neck) or if you are working with light coloured yarn, the stitches in holding position may become soiled.
To prevent this, take these stitches off onto waste yarn instead of using the holding position.



1.STOCKING STITCH AND PLATING

①"KNIT ONE SIDE" with the sound "beep" appears when you need to knit separately. Select (L) or (R) depending on which side you have finished knitting and push ↵ key.

② Knitting width for the part you have selected to knit first appears.
Bring forward the needles into E position for the part you want to knit first.

③ Set the Holding Cam Lever to H.

④ Remove the main yarn from the Yarn Feeder and hook it around the edge of the machine.

⑤ Push both PART Buttons and move the K-Carriage to the other side without the yarn in the Yarn Feeder. Release the Cam Buttons by pushing the Cam Button Release Lever.

⑥ Make a note of the needle numbers at both ends in B position.

⑦ Thread the waste yarn into the Yarn Feeder and knit about 10 rows. Remove the waste yarn and knit 1 row with the Yarn Feeder empty, to release the knitting.
Push the empty needles back to A position.

⑧ Move the K-Carriage across to the main yarn end and place it outside the Position Sensor.
Thread the main yarn into the Yarn Feeder, and set the Holding Cam Lever to N.

⑨ Push ↵ key, and the knitting screen reappears. Move the K-carriage across the Position Sensor.
Knit the first part of V-neck according to the indication.

⑩ Knit till you hear the sound "beep". Knit one more row, "KNITTING COMPLETED" appears on the Display.
Take the part off the machine and return the needles back to A position.

⑪ Push ↵ key, and "KNIT ONE SIDE" reappears. Select the icon which you have not selected in Step ①, and push ↵ key.

⑫ Replace stitches from waste knitting back onto the needles according to your note at Step ⑥ using the Transfer Tool. Put the needles into B position.

⑬ Place the K-Carriage outside the Position Sensor, and thread the main yarn into the Yarn feeder.

⑭ Follow the Steps ⑨ - ⑩.
※ Make sure that the width indication corresponds to the needles in B position.

⑮ Push ↵ key, and the indication returns to the start position.

2.PATTERN KNITTING

①"KNIT ONE SIDE" with the sound "beep" appears when you need to knit separately. Select (L) or (R) depending on which side you have finished knitting and push ↵ key.

② Knitting width for the part you have selected to knit first appears.
Bring forward the needles into E position for the part you want to knit first.
Push the other needles to B position.

③ Set the Change Knob to N.L. and the Holding Cam Lever to H.

④ Remove the main yarn from the Yarn Feeder and hook it around the edge of the machine.

⑤ Push the both PART Buttons and move the K-Carriage to the other side without the yarn in the Yarn Feeder. Release the Cam Buttons by pushing the Cam Button Release Lever.

⑥ Make a note of the needle numbers at both ends in B position.

⑦ Thread the waste yarn into the Yarn Feeder and knit about 10 rows. Remove the waste yarn and knit 1 row with the Yarn Feeder empty, to release the knitting.
Return the empty needles to A position.

⑧ Place the K-Carriage at the opposite side to the main yarn outside the Position Sensor.

⑨ Return the needles in E position to B, replacing stitches into the hooks of the needles using the Transfer Tool.

⑩ Push both PART Buttons. Set the Change Knob to KC(I) or KC(II).

⑪ To select the needles, move the K-Carriage across the Position Sensor while the stop screen is on the Display.

⑫ Push the Cam Button according to the pattern and thread the yarn into the Yarn Feeder.

⑬ Push ↵ key, and the knitting screen reappears. Knit this part of the neck and shoulder according to the indication.

⑭ Knit till you hear the sound "beep". Knit one more row, "KNITTING COMPLETED" appears on the Display.
Take the part off the machine and return the needles back to A position.

⑮ Push ↵ key, "KNIT ONE SIDE" reappears. Select the icon which you have not selected in Step1, and push ↵ key.

⑯ Replace stitches from waste knitting back onto the needles according to your note at Step ⑥ using the Transfer Tool. Put the needles into B position.

⑰ Place the K-Carriage outside the Position Sensor at the opposite side to the knitting.

⑱ Follow the Steps ⑩ - ⑭ .
※ Make sure that the width indication corresponds to the needles in B position.

⑲ Push ↵ key, and the indication returns to the start position.

3.LACE OR FINE LACE PATTERN

※ When shaping a neckline in Lace pattern, the computer selects the right side to knit first.

①"KNIT ONE SIDE" with the sound "beep" appears when you need to knit separately. Select (R), and push ↵ key.

② Take the left shoulder off onto waste yarn.
(Refer to the Steps ② - ⑦ in Stocking Stitch and Plating on page76.)

③ Place the K-Carriage outside the right Position Sensor and the L-Carriage outside the left Position Sensor.

④ Return the needles in E position to B using the Transfer Tool to replace the stitches into hooks.

⑤ Push ↵ key, and the knitting screen reappears. Thread the yarn into the Yarn Feeder and knit the right side of the neck and shoulder according to the indications, using the K and L Carriages.

⑥ Knit till you hear the sound "beep". Knit one more row, "KNITTING COMPLETED" appears on the Display.
Take this part off the machine and return the needles back to A position.

⑦ Push ↵ key, "KNIT ONE SIDE" reappears. Select (L), and push ↵ key.

⑧ Replace stitches from waste knitting back onto the needles according to your note using the Transfer Tool. Put the needles into B position.

⑨ Place the K-Carriage outside the right Position Sensor. Thread up the yarn into the Yarn Feeder.

⑩ Follow the Steps ⑤ - ⑥ .
※ Make sure that the width indication corresponds to the needles in B position.

⑪ Push ↵ key, and the indication returns to the start position.

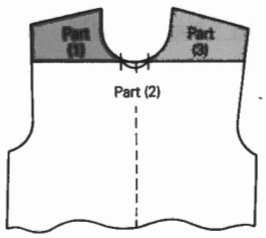
WHEN USING ROW MEMORY PROGRAM... You can use (ROW MEMORY PROGRAM)when you want to memorize the data on a particular row.

HOW TO SHAPE A ROUND NECKLINE

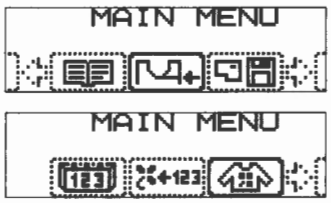
1.STOCKING STITCH AND PLATING

(Using the Holding Cam Lever)

· The following example begins with the yarn and K-Carriage at the left. Reverse instructions (e.g. read left for right) if beginning with yarn and K-Carriage at the right.

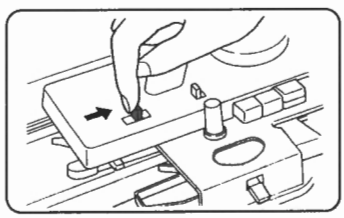


① Before operating the K-Carriage for the next row, push ↩ key to load the main menu.
Select (ROW MEMORY INPUT) and push ↵ key. Then, select (KNITTING),and push ↵ key, and the knitting screen reappears.

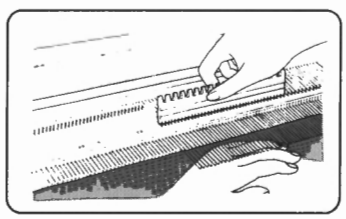


※The ROW MEMORY INPUT icon will not appear in the main menu if a garment has been positioned . First cancel any positioned garment.

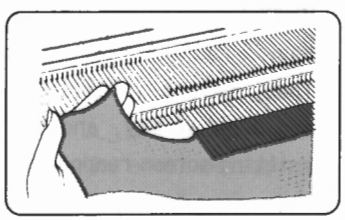
② On the K-Carriage, set the Holding Cam Lever to H.



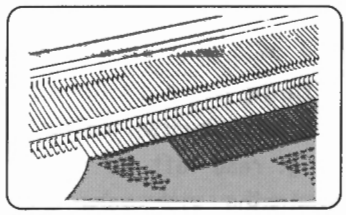
③ Using the flat side of the 1 x 1 Needle Pusher, bring the needles for Parts(2) and (3) forward to E position. (These needles will not be knitted.)



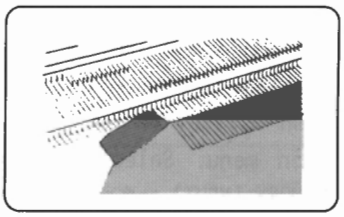
④ Knit Part(1) according to your pattern, then take it off the machine and return the needles for Part(1) back to A position.



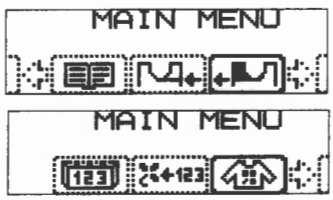
⑤ Bring the needles for Part(2) back to B position, by replacing the stitches into the needles hooks using the Transfer Tool.



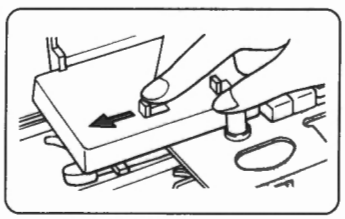
⑥ Waste knit Part(2) and take it off the machine. Return the needles for Part(2) back to A position. Now only the needles for Part(3) are left in E position.



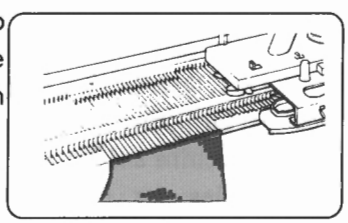
⑦ Push ↩ key to load the main menu. Select (ROW MEMORY RECALL) and push ↵ key.
Then, select (KNITTING), and push ↵ key, and the knitting screen reappears.



⑧ Set the Holding Cam Lever to N.

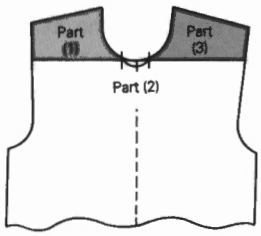


⑨ Knit Part(3) according to your pattern. The neckline shaping has now been completed.

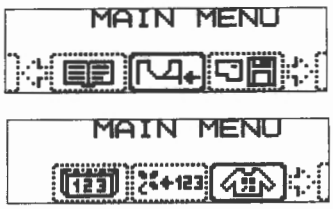


2.PATTERN KNITTING (Using the Holding Cam Lever)

· The following example begins with the yarn and K-Carriage at the left. Reverse instructions (e.g. read left for right) if beginning with yarn and K-Carriage at the right.



① Before operating the K-Carriage for the next row, push ⮌ key to load the main menu. Select (ROW MEMORY INPUT) and push ↵ key.
Then, select (KNITTING), and push ↵ key, and the knitting screen reappears.

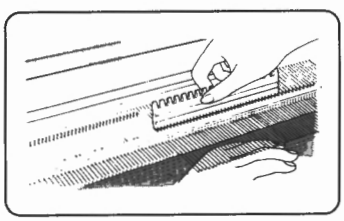


※The ROW MEMORY INPUT icon will not appear in the main menu if a garment has been positioned . First cancel any positioned garment.

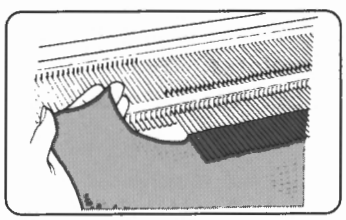
NOTE:You should select (ROW MEMORY INPUT)before operating the K-Carriage for the next row.
If you have operated the K-Carriage, push ↵ key to load the stop screen. Place the K-Carriage outside the Position Sensor. Use the ▽ Down key to put the row number back by one row, and then push ↵ key. Then select (ROW MEMORY INPUT).

② Set the Holding Cam Lever to H.

③ Using the flat side of the 1 x 1 Needle Pusher, bring the needles for Part(2) and (3) forward to E position. (These needles will not be knitted.)

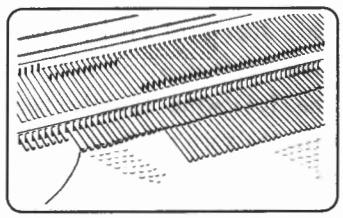


④ Knit Part(1) according to your pattern, then take it off the machine and return the needles for Part(1) back to A position.

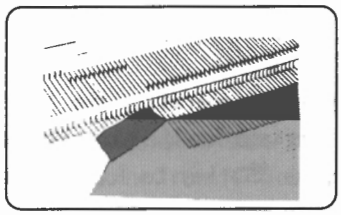


⑤ Set the Change Knob to N.L.

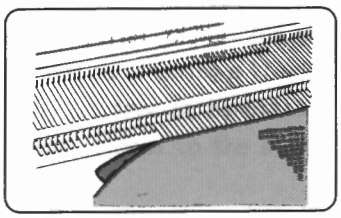
⑥ Bring the needles for Part(2) back to B position, by replacing the stitches into the needle hooks using the Transfer Tool.



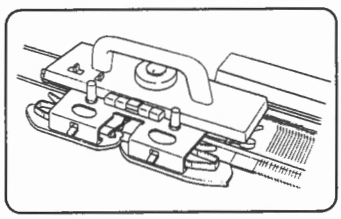
⑦ Waste knit Part(2) and take it off the machine. Return the needles for Part(2) back to A position.



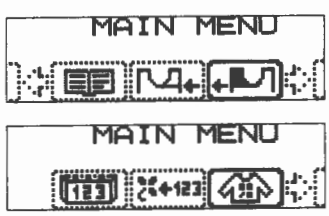
⑧ Now only the needles for Part(3) are left in E position. Bring these needles back to B position, in the same way as you did for Part(2).



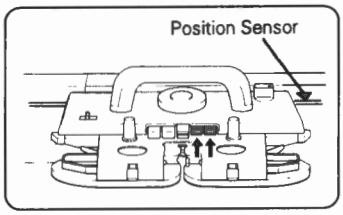
⑨ Place the K-Carriage outside the left Position Sensor.
*If you have knitted Part(3) first, place the K-Carriage outside the right Position Sensor.



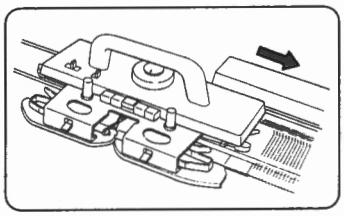
⑩ Push ⮌ key to load the main menu. Select (ROW MEMORY RECALL) and push ↵ key.
Then, select (KNITTING), and push ↵ key, and the knitting screen reappears.



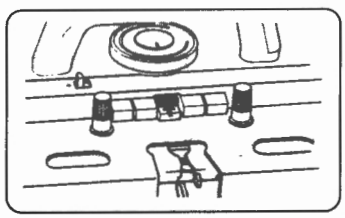
⑪ Push ↵ key, and the stop screen appears. Push both PART Buttons.
Set the Change Knob to KC(I) or KC(II).



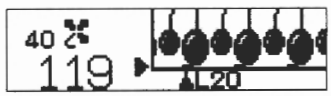
⑫ Move the K-Carriage from left to right. The needles are selected according to the pattern row memorized by (ROW MEMORY INPUT).

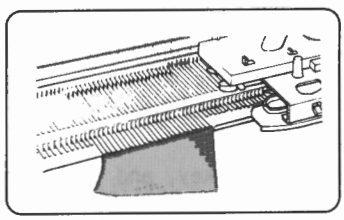


⑬ Push the Cam Buttons according to pattern. Thread the yarn into the Yarn Feeder.



⑭ Push the ↵ key, and the knitting screen reappears. Knit Part(3) according to your pattern. The neckline shaping has now been completed.

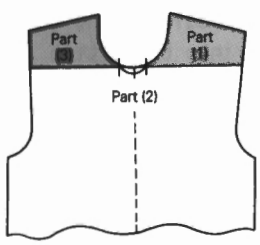




3.LACE OR FINE LACE PATTERN

(Using the Cast-on thread)

· When shaping a neckline in Lace pattern, knit the right side first. If the yarn end is at the left, knit one more row so that the K-Carriage is at the right-hand side.

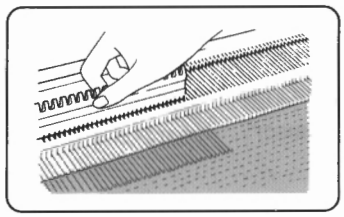


NOTE:While you are waste knitting, the error message may appear. Do the waste knitting first and push ↵ key to clear the error message.

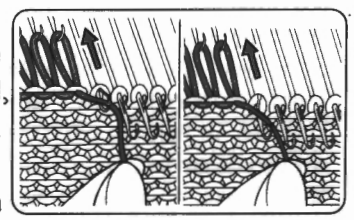
① Push ↩ key to load the main menu. Select (ROW MEMORY INPUT) and push ↵ key.
Then, select (KNITTING), and push ↵ key, and the knitting screen reappears.

※The ROW MEMORY INPUT icon will not appear in the main menu if a garment has been positioned. First cancel any positioned garment.

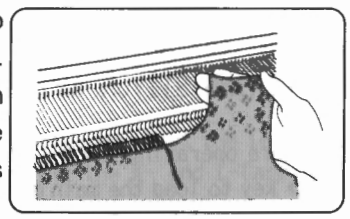
② Using the flat side of the 1 x 1 Needle Pusher, bring the needles for Part(2) and (3) forward to E position.



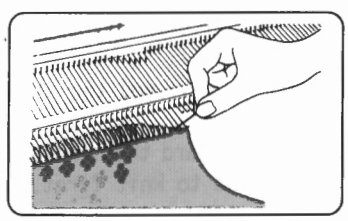
③ Hang the Cast-on Thread over the hooks of the needles in E position, and, knit them back to A position by hand.
(These needles in A position will not be knitted.)



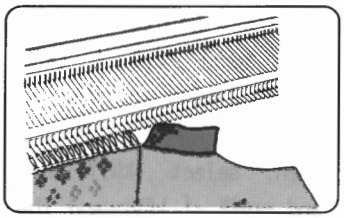
④ Knit Part(1) according to your pattern using both L and K Carriages, and then take it out off the machine and return these needles back to A position.



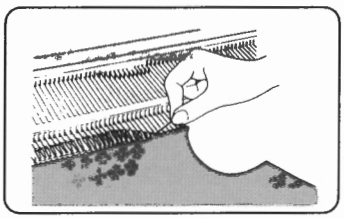
⑤ Bring needles for Part(2) from A to B position, while replacing the stitches into the needle hooks and removing the Cast-on Thread.



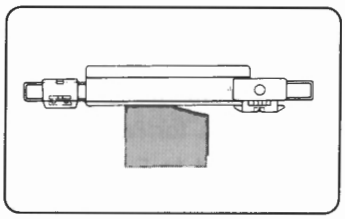
⑥ Waste knit Part(2) and take it off the machine. Return the needles back to A position.



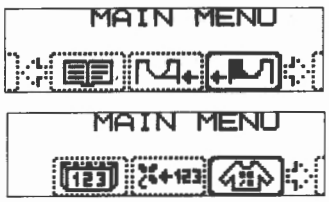
⑦ Now only the needles for Part(3) are left in A position. Bring these to B position, in the same way as you did for Part(2).



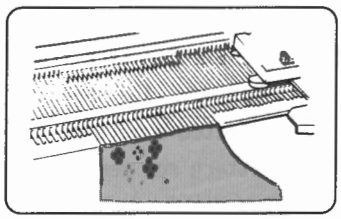
⑧ Place the K-Carriage outside the right Position Sensor and the L-Carriage outside the left Position Sensor.



⑨ Push ↩ key to load the main menu. Select (ROW MEMORY RECALL) and push ↵ key. Then, select (KNITTING), and push ↵ key, and the knitting screen reappears.



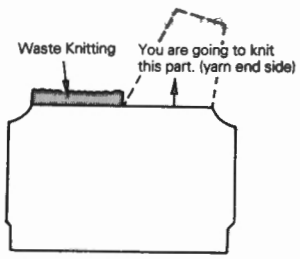
⑩ Thread the yarn into the Yarn Feeder. Knit Part(3) according to your pattern, using the K and L Carriages. The neckline shaping has now been completed.



HOW TO SHAPE A V-NECKLINE

(Taking part of the knitting off on waste yarn)

· When using the holding position to divide your knitting(e.g. for a V-neck) or if you are working with light coloured yarn, the stitches in holding position may become soiled. To prevent this, take these stitches off onto waste yarn instead of using the holding position.



1.STOCKING STITCH AND PLATING

① Before operating the K-Carriage for the next row, push ↩ key to load the main menu. Select (ROW MEMORY INPUT) and push ↵ key. Then, select (KNITTING), and push ↵ key, and the knitting screen reappears.

※The ROW MEMORY INPUT icon will not appear in the main menu if a garment has been positioned . First cancel any positioned garment.

② Push ↵ key, and the stop screen appears.

③ Bring forward the needles into E position for the part your want to knit first.

④ Set the Holding Cam Lever to H.

⑤ Remove the main yarn from the Yarn Feeder and hook it around the edge of the machine.

⑥ Push both PART buttons and move the K-Carriage to the other side without the yarn in the Yarn Feeder. Release the Cam Buttons by pushing the Cam Button Release Lever.

⑦ Thread the waste yarn into the Yarn feeder and knit about 10 rows. Remove the waste yarn and knit 1 row with the Yarn Feeder empty, to release the knitting.

⑧ Return the empty needles to A position.

⑨ Move the K-Carriage across to the main yarn end and thread the main yarn into the Yarn Feeder. Set the Holding Cam Lever to N.

⑩ Push ↵ key, and the knitting screen appears.

⑪ Knit the first part of the V-neck.

⑫ Return the empty needles to A position.

⑬ Place the K-Carriage outside the Position Sensor at the opposite side to the first part of the neck and shoulder.

⑭ Replace stitches from waste knitting back onto the needles using the Transfer Tool, and put the needles into B position.

⑮ Push ↩ key to load the main menu. Select (ROW MEMORY RECALL) and push ↵ key.
Then, select (KNITTING), and push ↵ key, and the knitting screen reappears.

⑯ Knit the second part of the V-neck.

2.PATTERN KNITTING

① Before operating the K-Carriage for the next row, push ↩ key to load the main menu. Select (ROW MEMORY INPUT) and push ↵ key.
Then, select (KNITTING), and push ↵ key, and the knitting screen reappears.

② Set the Change Knob to N.L.

③ Push ↵ key, and the stop screen appears.

④ Bring forward the needles into E position for the part you want to knit first. Push the other needles to B position.

⑤ Take part of the knitting off onto waste yarn.(Refer to the Steps ④ - ⑧ on page 81.)

⑥ Place the K-Carriage outside the Position Sensor at the opposite side to the yarn.

⑦ Return the needles in E position to B position. Use the Transfer Tool to replace stitches into the hooks of the needles. Place all needles in B position.

⑧ Set the Change Knob to KC(I) or KC(II). Push both PART Buttons.

⑨ Move the K-Carriage across the Position Sensor with the Yarn Feeder empty.

⑩ Push the Cam Button according to the pattern. Thread the yarn into the Yarn Feeder.

⑪ Push ↵ key, and the knitting screen appears.

⑫ Knit the first part of the neck and shoulder. Push back the empty needles to A position.

⑬ Place the K-Carriage outside the Position Sensor at the opposite side to the first part.

⑭ Replace the stitches from waste knitting back onto the needles using the Transfer Tool and place the needles in B position.

⑮ Set the Change Knob to KC(I) or KC(II). Push both PART Buttons.

⑯ Push ↩ key to load the main menu. Select (ROW MEMORY RECALL) and push ↵ key.
Then, select (KNITTING), and push ↵ key, and the knitting screen reappears.

⑰ Push ↵ key, and the stop screen appears.

⑱ Follow the Step ⑨ - ⑪. Complete the second part of the neck and shoulder, reversing shaping.

3.LACE OR FINE LACE PATTERN

· When shaping a neckline in Lace pattern, knit the right side first. If the yarn end is at the left, knit one more row so that the K-Carriage is at the righthand side.

NOTE:While you are waste knitting, the error message may appear. Do the waste knitting first and push ↵ key to clear the error message.

① Push ↩ key to load the main menu. Select (ROW MEMORY INPUT) and push ↵ key.
Then, select (KNITTING), and push ↵ key, and the knitting screen reappears.

② Take the left shoulder off onto waste yarn. (Refer to the Steps ② - ⑧ on page 81.)

③ Place the K-Carriage outside the right Position Sensor and the L-Carriage outside the left Position Sensor.

④ Return the needles in E position to B position. Use the Transfer Tool to replace stitches into the hooks of the needles. Place all needles in B position.

⑤ Push ↵ key, and the knitting screen appears.

⑥ Thread the yarn into the Yarn Feeder and knit the right side of the neck and shoulder , using the K- and L-Carriages.

⑦ Push the empty needles back to A position.

⑧ Place the K-Carriage outside the right Position Sensor and the L-Carriage outside the left Position Sensor.

⑨ Replace the stitches for the left side back onto the needles using the Transfer Tool and place the needles in B position.

⑩ Push ↩ key to load the main menu. Select (ROW MEMORY RECALL) and push ↵ key.
Then, select (KNITTING), and push ↵ key, and the knitting screen reappears.

⑪ Thread the yarn into the Yarn Feeder. Knit the left side of the neck and shoulder using the K- and L-Carriages according to your pattern.

OPTIONAL ACCESSORIES

CARTRIDGE

・STITCH PATTERN CARTRIDGE/LACE CARTRIDGE/MC CARTRIDGE
You can store all your own patterns/garments created in your knitting machine onto the cartridge. Also, you can load the patterns or garments stored in the cartridge into the machine.
Yon can knit your own patterns created on other knitting machines and the pattern programming device(PPD) using the cartridge. However, you cannot transfer the data created on KH970 into the other machines or PPD.

・STITCH PATTERN CARTRIDGE EXTRA'S
This cartridge has over 800 patterns in Punchcard Book Volume 5 in it. You can load these patterns into your knitting machine.

・BLANK CARTRIDGE
You can store all your own patterns/garments created on the knitting machines onto the cartridge. Once you have the patterns/garments stored in the cartridge you can load them back into the machine whenever required.

CAUTION

・Do not insert or remove the cartridge to/from the Slot with the Power Switch on.
・Do not insert or remove the cartridge to/from the Slot while setting the CB-1 on the machine.
・Do not touch the metal part of the bottom of the cartridge with the fingers or metal.
・Do not get the cartridge wet.
・Do not drop the cartridge or put something on it.
・Do not leave the cartridge in a hot or humid place.
・The battery of the cartridge saves the data for approx. ten years. When ten years have passed from purchasing the cartridge, ask a dealer to change the battery.

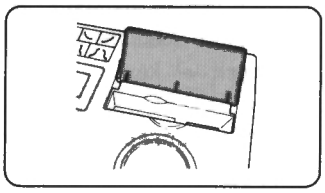
MAIN MENU
[DATA TRANSFER PROGRAM]

● TRANSFERRING DATA FROM OR TO THE CARTRIDGE...
・Before transferring data from/to the cartridge,

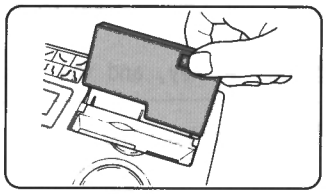
① Turn off the Power Switch of CB-1.

② Place the CB-1 flat on a table.

③Open the lid of the Cartridge Slot on the CB-1 and insert the cartridge into the Slot.
※Make sure the cartridge is inserted straight.



④ Turn the power on.



・After transferring the data from/to the cartridge,

① Turn off the Power Switch of CB-1.

② Take the cartridge out of the Slot, on the table.

③ Turn the power on.

NOTE: You have to take a cartridge off the CB-1 and secure the lid except during using (DATA TRANSFER).

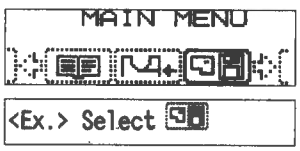
《 CARTRIDGE SAVE 》

You can store on a cartridge the data which has been memorized by your knitting machine.

●NOTE
Saving the data on the cartridge erases any data that might be on it. Before saving the data on the cartridge, check whether there is already data on it with (CARTRIDGE LOAD).

When you try saving the data into the cartridge used with other electronic knitting machines, the error message "36" appears on the Display.
In this case, delete the data with (CARTRIDGE DELETE) and then use the cartridge for saving.

●HOW TO PROGRAM
① Insert the cartridge into the Slot, and turn on the Power Switch.



② Select (DATA TRANSFER) in the main menu, and push ↵ key.

<Ex.> Select

③ Select (CARTRIDGE SAVE), and push ↵ key.

<Ex.> Select OK

④ Select (OK), and push ↵ key when you want to save the data to the cartridge.
The mark appears. When saving is finished, the main menu reappears on the Display.

Select (×), and push ↵ key when you want to stop saving the data.
Then, the screen returns to the Step 3.

《 CARTRIDGE LOAD 》

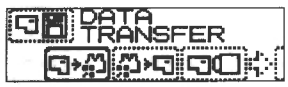
You can load data from a cartridge to your knitting machine.

●HOW TO PROGRAM

① Insert the cartridge into the Slot and turn on the Power Switch.

<Ex.> Select

② Select (DATA TRANSFER) in the main menu, and push ↵ key.



<Ex.> Select

③ Select (CARTRIDGE LOAD), and push ↵ key.

<Ex.> Select 1

④ Select Page number where you want to load the pattern/garment, and push ↵ key.

NOTE: This screen appears when you use Stitch Cartridge Extras' or a cartridge which has been used to store data from other models.
When you load the data stored by KH970, the above screen does not appear.

<Ex.> Select 904

⑤ Select Pattern/Garment number which you wish to load, and push ↵ key.

<Ex.> Select OK

⑥ Select (OK), and push ↵ key, when you want to load the data.
The mark appears.
The loading will happen instantly. Then the main menu appears.

Select (×), and push ↵ key when you want to stop loading the data.
Then, the screen returns to the Step 5.

NOTE: The knitting machine re-allocates that pattern/garment the next available empty number on your machine.
In this case, pattern No.904 in the cartridge is loaded into the CB-1 as pattern No.902.

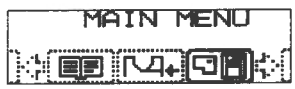
NOTE: You are advised to write down the Pattern/Garment number for the program.

《 CARTRIDGE DELETE 》

You can delete all data in the cartridge with this program. When you use a cartridge which has stored data from other models, delete the data with this program first to use it with KH970.

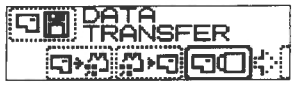
●HOW TO PROGRAM

① Insert the cartridge into the Slot, and turn on the Power Switch.



<Ex.> Select

② Select (DATA TRANSFER) in the main menu, and push ↵ key.



<Ex.> Select

③ Select (CARTRIDGE DELETE), and push ↵ key.

<Ex.> Select OK

④ Select (OK), and push ↵ key when you want to delete all data.
The mark appears on the Display and then the main menu reappears after finishing the deletion.

Select (×), and push ↵ key when you want to stop deleting all data.
Then, the screen returns to the Step 3.

● USING STITCH PATTERN CARTRIDGE EXTRA'S

The following pattern are for only KH900, so you cannot knit them with KH970.

Tuck & Lace Patterns	No.232~No.252 No.707~No.729
Woven Lace Patterns	No.274~No.286 No.769~No.783
Lace Patterns	No.167~No.176 No.198 No.558,559,565,630,638,639,640, 648

・MEMO INFORMATION ON STITCH PATTERN CARTRIDGE EXTRA'S

While pattern knitting, the Display shows the memo information for changing the contrast yarns etc.

While knitting in Fairisle of 1,80,98,529,530,531,532 and in Plating Tuck of 876,

the memo information "C" appears at the row to change the main and contrast yarns at the same time.

	Memo Information	
Fairisle Pattern	1～9	The numbers in the memo represent the colour numbers of main or contrast yarns.
Lace or Fine-lace Pattern		Move the L-Carriage when no memo data appears.
	2～8	Move the K-Carriage according to the number shown.
Weaving Pattern	2～9	The numbers of the memo represent the colour numbers of weaving yarn.
		No number in the memo represents to knit without weaving yarn.
Multi-Colour Tuck Stitch Pattern Multi-Colour Skip Stitch Pattern	1～9	The numbers on the memo represent the colour of the main yarn.
Lace and Fine-lace mixed	N	Set the Lace Change Lever to N and move the L- Carriage.
	F	Set the Lace Change Lever to F and move the L-Carriage.
	2～8	Move the K-Carriage according to the numbers in the memo.

PATTERN PROGRAMMING DEVICE (PPD120)

USING THE PATTERN PROGRAMMING DEVICE (PPD120)

●When you create the pattern for KH970 on PPD...

Refer to the instruction manual of PPD and select the mode for KH965i.

●When you transfer the data from PPD to the CB-1...

① Turn off the power switches of PPD and TV. Take the cartridge out of the slot of PPD.

② Insert the cartridge to the Slot of the CB-1 and then select (CARTRIDGE LOAD). See CARTRIDGE LOAD on page 84.

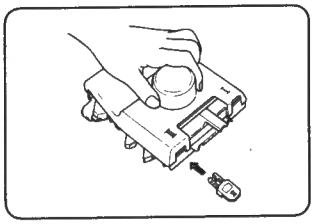
NOTE:You cannot connect PPD and the CB-1 with the Interface Cable.

INTARSIA CARRIAGE

When you use the Intarsia Carriage on KH970, please read the original Manual in conjunction with the following instructions.

TRIPPER FOR INTARSIA CARRIAGE

The I-Tripper for the Intarsia Carriage comes with KH970. Holding the I-Tripper "II" mark up, insert it into the "II" hole of the I-Carriage. The indication of Row Counter advances by pushing the Row Counter Trigger on the knitting machine with the I-Tripper.



●IF YOU MAKE MISTAKES IN INTARSIA KNITTING

(Refer to page 96-99.)

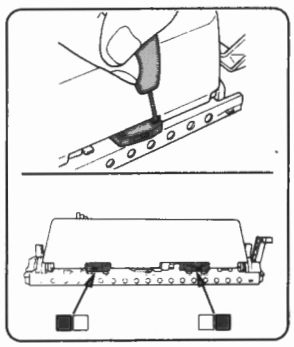
You can follow the same as instructions for knitting in stocking stitch with the K-Carriage.

AUTOMATIC CARRIAGE (KG-95)

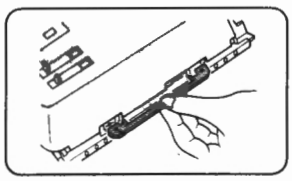
●BEFORE STARTING KNITTING WITH THE G-CARRIAGE,

① Place the Transfer Tool inside either Magnet on the rear of the G-Carriage and push it out to remove the Magnet. Take off both of them.

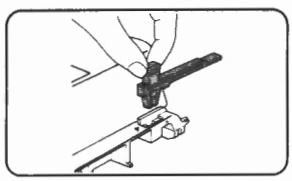
※When you use the G-Carriage on the other knitting machine again, set each Margnet with the white dot to the inside to the G-Carriage.



② Insert the G-Sensor Cam which comes with KH970 into the holes holding the "○" mark up. Make sure it is set securely.



③ Take the Row Counter Tripper out of the G-Carriage.



☆Please read the following instructions accompanying KG manual.

· The term " Turn Mark " on KG-95 manual is equivalent to " Position Sensor " on KH970.

· This knitting machine has no G-Lamp.
Select the pattern for the G-Carriage in (PATTERN POSITION INPUT)..
If you push ⮌ key or turn off the Power Switch during using the G-Carriage, always move the G-Carriage outside either Position Sensor and then start again.

NOTE:Even if the G-Carriage has passed over the Row Counter Trigger, the indications on the Display will not change. The indications will only change when the G-Carriage has passed approx. 35 needles after turning.

●"E" WRAP CASTING-ON (page 13*～ on KG manual)
" * " means KG manual.

(Page 13*)
Before casting on with "e" wrap, load the main menu screen by pushing ⮌ key. Then, cast on.
NOTE : The G-Carriage casts on over the needles represented by the blank squares.

(4. on Page 14*)
4 . No message appears on the Display after passing the G-Carriage over the Position Sensor.

●RIB KNITTING (Page 17*)
You can knit various ribbing using the following pattern numbers.

Ribbing	Pattern No.
1 × 1 Rib	No.519
2 × 1 Rib	No.520
2 × 2 Rib	No.521
3 × 3 Rib	No.522
4 × 4 Rib	No.523

· When you want to knit 1 x 1 Rib, do the following steps.
① Select all icons of (PATTERN VARIATION) OFF.

② Select the icons as belows:
(POSITIONING) → (PATTERN POSITION INPUT) → (G-CARRIAGE) →(ALL-OVER PATTERNING) →Pattern No.519 →Pattern Position L1.

③ Select (KNITTING) and push ↵ key.

●G-STITCH PATTERN DESIGNS (Page 21*)
· When you want to knit patterns with the G-Carriage, do the following steps.

<Ex. Pattern No.534>
① Select all icons of (PATTERN VARIATION) OFF.

② Select the icons as belows:
(POSITIONING) → (PATTERN POSITION INPUT) → (G-CARRIAGE)→(ALL-OVER PATTERNING)→Pattern No.534→ Pattern Position L6.

③ Select (KNITTING) and push ↵ key.

●HOW TO SHAPE A NECK LINE (Page 33*～)

There are two programs for shaping your neck line. Follow each step in conjunction with KG Manual.

· WHEN USING GARMENT POSITION INPUT

1. (1)Switch the Automatic Return Lever to " ⇆ " when the row "KNIT ONE SIDE" appears on the Display.
(2)When the G-Carriage clears the knitting, push the Stop Button.

2. Select (R) and push ↵ key.

4. Push ↵ key, and the knitting screen appears. Set the Carriage Direction Lever to "←" and push the Start Button.
Knit the Part ❶ while decreasing the stitches. Then, "KNITTING COMPLETED" appears.

7. Set the G-Carriage at the right side of knitting. Push ↵ key, and "KNIT ONE SIDE" reappears.

8. Select (L) and push ↵ key to load the knitting screen.

· WHEN USING ROW MEMORY PROGRAM

2. Enter the following program.
① Push the ⮌ Main Menu key.

② Select (ROW MEMORY INPUT) and push ↵ key.

③ Select (KNITTING) and push ↵ key.

NOTE
When the knitting is narrow it is possible that the Knit-Leader may not be triggered, so you must do this by hand.
The row numbers automatically advance on the knitting screen.
When you use (GARMENT POSITION INPUT), the indications on the Display automatically advance row by row.

(Page 35*)

8. Enter the following program.
① Push the ⮌ key.

② Select (ROW MEMORY RECALL) and push ↵ key.

③ Select (KNITTING) and push ↵ key.

●CHANGING THE YARN (Page 41*)

1. Select (MEMO INFORMATION INPUT) and enter each of 1～9 on a specific row.

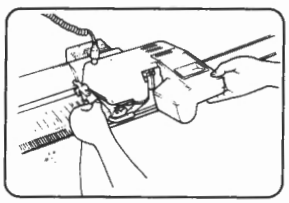
USEFUL HINTS (Page 43*～)

●IF THE G-CARRIAGE SHOULD STOP

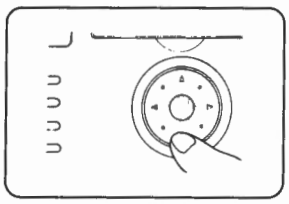
① Follow the steps 1 - 9 on page 43-45.
NOTE:Move the G-Carriage in the direction that the Carriage Direction Lever indicates and place it outside the Position Sensor.

② Push ↵ key, and the stop screen appears on the Display.

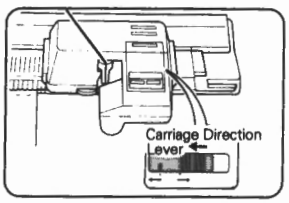
③ If the yarn is on the opposite side of the G-Carriage, move it back to the beginning of the row (to the opposite direction G-Carriage is moving).



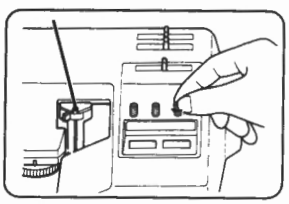
④ Push the ▽ Down key by the number of rows unravelled.
NOTE:Even if you unravel only one stitch, you must still count this as one row.



⑤ Thread the yarn in the Yarn Guide and set the Carriage Direction Lever.



⑥ Adjust the Row Counter.
(If you use the Knit-Leader, turn back the Feeding Dial by the number unravelled.)



⑦ Push ↵ key, and the knitting screen reappears on the Display. Then, push the Start Button on the G-Carriage.

(Page 45*～)

●When the G-Carriage is stopped clear of the knitting,

① Push ↵ key, and the stop screen appears on the Display.

② Make sure that the direction indication for the G-Carriage shows its current pattern row or next row.

③ Lift the front of the G-Carriage and place it outside the Position Sensor.

④ Follow the Steps 7 and 9 on page 44-45. If you unravel a few rows, repeat the Step of 9.

⑤ Follow the Steps ③ - ⑦ of "IF THE G-CARRIAGE SHOULD STOP" on page 87 . If the direction indication shows the next row, push the ▽ Down key by the number of rows unravelled plus one.

(Page 52～53*)

●WHEN THE POWER IS CUT OFF IN THE MIDDLE OF PATTERN KNITTING

1. When the G-Carriage has stopped in the middle of knitting...

① Lift the front part of the G-Carriage and move it back to the beginning of the row (to the opposite direction G-Carriage is moving). Place it outside the Position Sensor.

② Unravel the row.

③ Turn the Power Switch on.

④ Push ↵ key, and the stop screen appears. Then, push the ▽ Down key once.

⑤ Push ↵ key, and the knitting screen appears. Move the G-Carriage to the edge of the knitting and thread the yarn to the Yarn Guide. Start knitting again.

2. When the G-Carriage has stopped clear of knitting...

① Lift the front part of the G-Carriage and move it outside the Position Sensor of the yarn side.

② Turn the Power Switch on.

③ Move the G-Carriage to the edge of the knitting. Push the Start Button and start knitting again.

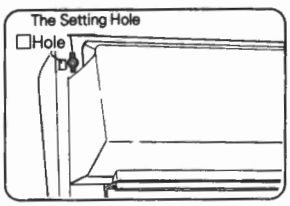
SINGLE BED COLOUR CHANGER (KHC)

・The Singlebed Colour Changer is used for Multicolour patterns, for example Multi-colour Tuck Stitch or Skip Stitch and Multi-colour Fairisle. It enables you to knit these pattern quicker and easier than you would normally. It can be fitted to both electronic and punchcard machines.
Please read the original instruction manual for the KHC in conjunction with the following instructions.

●How to install the KHC onto the knitting machine
Refer to the KHC Manual, and see the following instructions about (6) on page 3 and (7) on page 4.

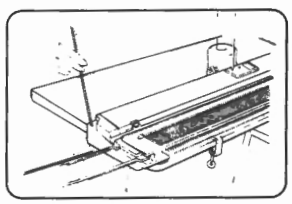
[(6) on Page 3]

You do not have to set the Yarn Tension Stand. You can use the setting hole on the corner of your knitting machine.



[(7) on Page 4]

Place the second Yarn Tension Unit into the setting hole.
※ Do not place the Yarn Tension Unit into the □ hole.



●Pattern

・All the patterns shown in the KHC manual are also memorized in the computer, so you can select these patterns from your Pattern Book.
・You can also use your KHC when knitting the following pattern numbers:

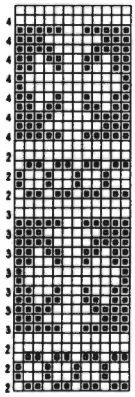
PATTERN	PATTERN NO.	NEGATIVE
Fairisle & Tuck Stitch Patterns shown in the KHC Manual	499～508	ON
Multi-colour Fairisle Patterns	67～92	ON
Multi-colour Tuck Stitch Patterns	259～275	OFF
Multi-colour Skip Stitch Patterns (2 colours) (3/4 colours)	 325～342 479～483	 OFF OFF

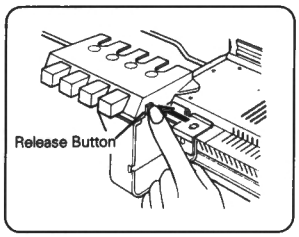
・When there are rows of plain knitting in between the pattern rows.

Example. "STITCH WORLD III" Pattern No.506

When the knitting row numbers 5,19,25, and 39, all the needles are selected to D position.

Push the Release Button on the KHC and knit two rows with the main yarn only.





Push the Release Button.

●PATTERN KNITTING

Fairisle Pattern

1.Enter the following programs on the CB-1.

(1) PATTERN VARIATION... (NEGATIVE) ON

(2)Select the icons as below: (POSITIONING)→ (PATTERN POSITION INPUT)→ (K-CARRIAGE)→ (ALL-OVER PATTERNING)→Pattern No.→Pattern Position

(3)If a garment has been positioned, select (GARMENT POSITION CANCEL).

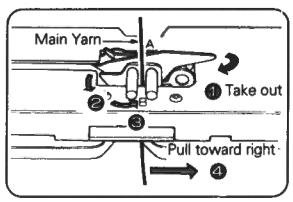
(4)Select (KNITTING) and push ↵ key.
While pushing the "0" key, push the ▽ Down key. The indications on the Display return to the start position.

(5)Push ↵ key, and the stop screen appears.

2.Refer to page 5 on your KHC Manual and thread up main and contrast yarns.
Button No. 1 - Main yarn、 Button No.2/3/4 - Contrast yarn

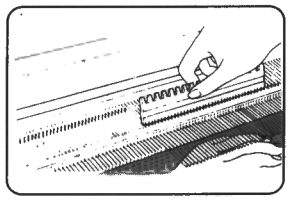
3.Knit approximately 10 rows in stocking stitch with the main yarn and place the K- Carriage outside the right Position Sensor.

4.Transfer the main yarn from the Yarn Feeder "A" into "B".



5.Take the main yarn off the Roller 1 and cancel the Changer Button 1.

6.Bring all the needles forward from B to E position.



7.Set the Change Knob to KC(I) and push the upper MC Button.

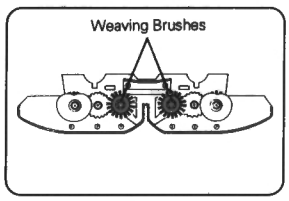
8.Move the K-Carriage from right to left, so that it is outside the left Position Sensor and the needles have been selected.

9.Push ↵ key, and the knitting screen appears on the Display.

10.Continue knitting. Push the Changer Button according to the memo information on the Display.

Multi-colour Tuck and Skip Stitch pattern(2 colours)

1.When you knit Multi-colour Tuck Stitch pattern with KHC, put the Weaving Brushes in action.
(Put them out of action when you knit other patterns.)



2.Enter the following programs on the CB-1.

(1)(PATTERN VARIATION)...All icons OFF.
※When you knit Pattern No.508 ,turn on (NEGATIVE).

(2)Select the icons as below:
(POSITIONING)→ (PATTERN POSITION INPUT)→ (K-CARRIAGE)→(ALL-OVER PATTERNING)→Pattern No.→ Pattern Position

(3)If a garment has been positioned, select (GARMENT POSITION CANCEL).

(4)Select (KNITTING) and push ↵ key.
While pushing the "0" key, push the ▽ Down key.

(5)Push ↵ key, and the stop screen appears.

3. Thread the yarn into the KHC and knit approximately 10 rows ending with the K- Carriage at the right. Place the K-Carriage outside the right Position Sensor.

4. Set the Change Knob to KC(I) and move the K-Carriage from right to left so that it is outside the left Position Sensor and the needles have been selected.

5. Push ↵ key, and the knitting screen appears on the Display.

6. Push both TUCK Buttons for Tuck Stitch pattern.
   Push both PART Buttons for Skip Stitch pattern.

7. Continue knitting. Push the Changer Button according to the memo information on the Display.

Multi-colour Skip Stitch pattern (3 colours/4 colours)

In order to knit these patterns, follow the Steps of Multi-colour Tuck and Skip Stitch pattern (2 colours). Set (DOUBLE LENGTH) ON in (PATTERN VARIATION).

NOTE
- When you knit Multi-colour Skip Stitch pattern (3/4 colours) in (MOTIF)...
  Move the K-Carriage across the knitting twice without yarn if the needles are not selected.

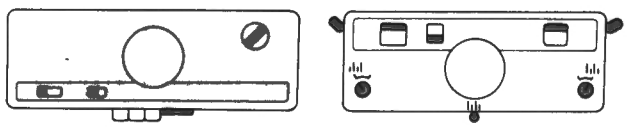
- The memo information for Motif 1 appears in the memo when you program more than two patterns.

DOUBLE BED COLOUR CHANGER (KRC)

You can knit Mulit-colour Rib patterns which do not have any floats on the wrong side, with KRC.

· Please read the Manuals for the KR and KRC in conjunction with following instruction.

● Pattern

PATTERN	PATTERN NO.484~498	PATTERN NO. 1~107, 509~518 (Original patterns for KRC) Your own patterns created with (2 colours)	PATTERN NO. 479~483 Your own patterns created with (3 colours), with (4 colours)
PATTERN VARIATION	(DOUBLE LENGTH) OFF (MC RIB) OFF	(DOUBLE LENGTH) OFF (MC RIB) ON	(DOUBLE LENGTH) ON (MC RIB) ON
PATTERN KNITTING	1.Enter the following programs on the CB-1. (1)(PATTERN VARIATION)...ON or OFF as above. (2)Select the icons as below: (POSITIONING)→(PATTERN POSITION INPUT)→(K-CARRIAGE)→(ALL-OVER PATTERNING)/(MOTIF PATTERNING) →Pattern No.→Pattern Position (3)If a garment has been positioned, select (GARMENT POSITION CANCEL). (4)Select (KNITTING) and push ↵ key. While pushing the "0" key, push the ▽ Down key. (5)Push ↵ key, and the stop screen appears.		
	2.Set up the ribber and the colour changer, and insert the Knitting Bar.		
	3.See page 8-9 on the KRC Manual. Thread yarns through the KRC. See the colour combinations at the bottom of picture.	3.See page 8-9 on the KRC Manual. Thread yarns through the KRC. Thread a main yarn to the hook on the Button ① and contrast yarns to ②,③, and ④.	3.See page 8-9 on the KRC Manual. Thread yarns through the KRC. Thread yarns according to memo information. Replace contrast yarns of ⑤ and ⑥ to others.
	4.Arrange needles for full needle rib. Cast on with the yarn to be used on the first row of the pattern in the diagram on the Pattern Book. Knit 10 rows, ending with the Carriages outside the left Position Sensor.	4.Arrange needles for full needle rib. Cast on with a main yarn. Knit 10 rows, ending with the Carriages outside the left Position Sensor.	4.Arrange needles for full needle rib. Cast on with the yarn in the Button 1. Knit 10 rows, ending with the Carriages outside the right Position Sensor.
	5.Set the Change Knob to KC(II).		
	6.Move the Carriages from left to right across the left Position Sensor. The needles have been selected.		6.Move the Carriages toward the KRC until you hear the "Click". Push the Buttons according to memo information.
	7.Push ↵ key, and the knitting screen appears on the Display.		
	8.Set the KH/KR Carriages as below. 		
	9.Move the Carriages towards the KRC until your hear the "Click". Knit 2 rows with the yarn shown.		9.Knit 2 rows.
	10.Change the yarn according to the memo information when the Carriages are moved to left. NOTE:Make sure that you push each Button after hearing the "Click".		

FLOPPY DISK DRIVE UNIT FB-100

You can store your created data of patterns and garments on a floppy disk using FB-100. Also you can load patterns/garments from a disk into the CB-1.

CAUTION

- Make sure that the disk is not set in the drive and the disk in/out bar is pushed down before you turn the power on/off.
- Do not turn off the power switches of both the CB-1 and the drive while the access lamp light is on.
- When you do not use the drive, push down the disk in/out bar to prevent dust entering.
- Before the main menu appears on the Display,do not turn off both power switches of the CB-1 and the drive or take a disk out of the drive.

●NOTE

- FB-100 accepts 3.5-inch floppy disks of 1D,2D,1DD and 2DD.
- Before using the drive, read the instruction manual.

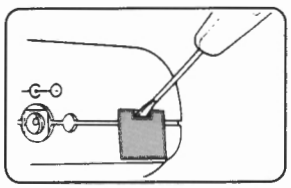
MAIN MENU 【 DATA TRANSFER PROGRAM 】

●CONNECTING THE DRIVE TO THE CB-1

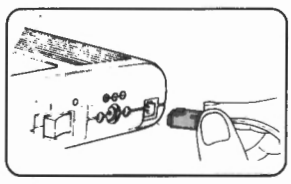
① Turn off the power switches of the drive and CB-1.

② Remove the FB Connector Cover on the right side of the CB-1 with the Transfer Tool.

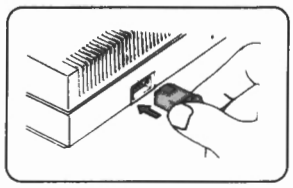
NOTE:When you do not use the drive, fit the FB Connector Cover to the CB-1.



③ Plug the Interface Cable into the FB Connector on the CB-1.



④ Plug the other end of the Interface Cable into the drive.



⑤ Turn the power on, and then set the disk into the drive.

⑥ Turn on the CB-1 Power Switch.

《 DISK FORMAT 》

Before you can use a new disk to store pattern/garment information from your electronic knitting machine, you need to prepare the new disk to make it ready to accept your data. This preparation process is called "formatting". Remember to do this for every new disk.

●NOTE

- If you format a disk that has data already stored on it, this data will be erased.
- The disk that has been formatted with KH970 cannot be used with other electronic knitting machines.

●HOW TO FORMAT YOUR DISK

① Insert the disk which you are going to format into the drive.

<Ex.> Select

② Select (DATA TRANSFER) in the main menu, and push ↵ key.

<Ex.> Select

③ Select (DISK FORMAT) and push ↵ key.

<Ex.> Select OK

④ Select (OK) and push ↵ key when you want to format a disk. The mark appears on the Display and the main menu screen appears after formatting the disk. It takes about five minutes.

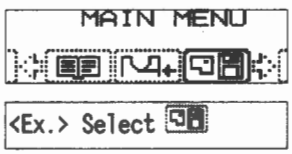
Select (×) and push ↵ key when you stop formatting the disk. Then, the screen returns to the Step 3.

《 DISK SAVE 》

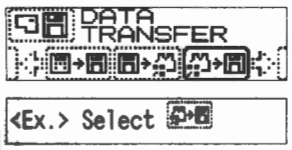
There are two pages or tracks on each disk. When the data is stored on both pages, delete the data on either page and then save the data.
The computer shows the page number where the data can be stored.
All the pattern and garment data entered in your knitting machine can be stored on the disk.

●HOW TO SAVE YOUR DATA

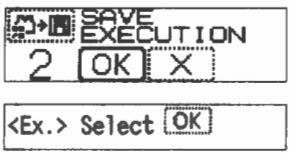
① Insert the disk into the drive.



② Select (DATA TRANSFER) in the main menu, and push ↵ key.



③ Select (DISK SAVE) and push ↵ key.
The mark appears on the Display and then the following screen appears.



④ Select (OK), and push ↵ key when you want to save the data.
The mark appears on the Display and the main menu appears after saving the data.
Select (×), and push ↵ key when you want to stop saving the data.
Then, the screen returns to the Step 3.

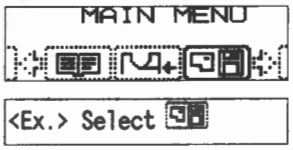
NOTE:You are advised to write down the page number shown at the Step 4.

《 DISK LOAD 》

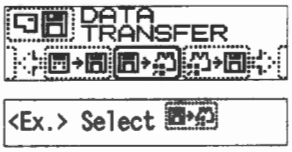
When you want to knit the saved data on the disk, you need to load it back into the CB-1.

●HOW TO LOAD YOUR DATA

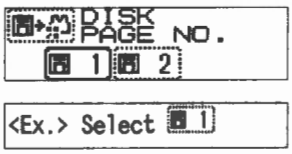
① Insert the disk into the drive.



② Select (DATA TRANSFER) in the main menu and push ↵ key.

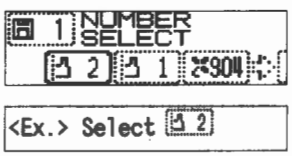


③ Select (DISK LOAD) and push ↵ key.

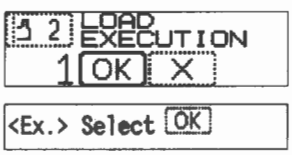


④ Select the page number which contains the pattern/garment data you want to load, and push ↵ key. The mark appears on the Display and then the following screen appears.

NOTE:When you insert the disk which you have stored using other models, numbers except 1 or 2 might appear on the Display.



⑤ Select the pattern/garment number which you want to load and push ↵ key.



⑥ Select (OK) and push ↵ key when you want to load the data.
Then, the main menu screen appears on the Display.

Select (×) and push ↵ key when you want to stop loading the data.
Then, the screen returns to the Step 5.

NOTE:The computer reallocates loaded pattern or garment the next available empty number on your machine. In this case, Garment No.2 on the disk is loaded into the CB-1 as Garment No.1.

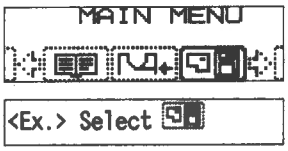
NOTE:A new pattern/garment number given by the computer appears on the Display.
You are advised to write down the pattern/garment number shown at the Step 6.

《 DISK DELETE 》

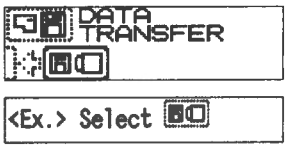
The saved data stored on a disk can be deleted one page at a time.

●HOW TO DELETE YOUR DATA

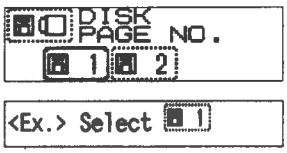
① Insert the disk into the drive.



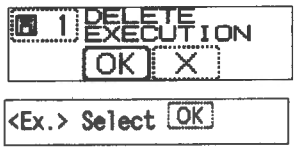
② Select (DATA TRANSFER) in the main menu and push ↵ key.



③ Select (DISK DELETE) and push ↵ key.
The mark appears on the Display and then the following screen appears.



④ Select the page number which you are going to delete on the disk and push ↵ key.



⑤ Select (OK) and push ↵ key when you want to delete the data.
The mark appears on the Display and the main menu reappears after deleting.

Select (×) and push ↵ key when you want to stop deleting your data.
Then, the screen returns to the Step 4.

☆WHAT TO DO IF ELECTRIC POWER FAILS WHEN USING THE DRIVE OR THE CB-1

①Check that the access lamp is off.

②Remove the disk from the drive.

③Turn off the power switches of both the drive and the CB-1 and then turn them on.

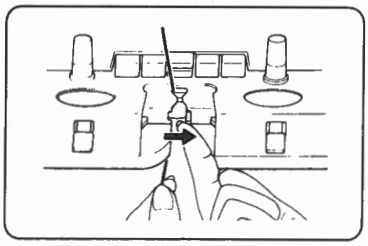
④Set the disk into the drive.

⑤Start all over again.

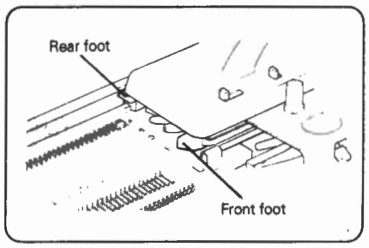
WHAT TO DO WHEN YOU CANNOT KNIT SMOOTHLY

1.WHEN THE NEEDLES DO NOT CATCH THE YARN PROPERLY

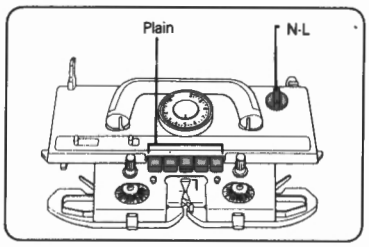
· Is the yarn correctly located in Feeder "A"?
· Is the Yarn Feeder Lever closed?



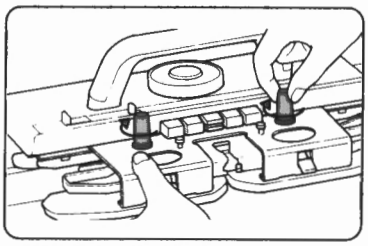
· Is the K-Carriage set correctly on the Needlebed?



· Is the Change Knob set to N.L.?
· Has any Cam Button been pushed in?

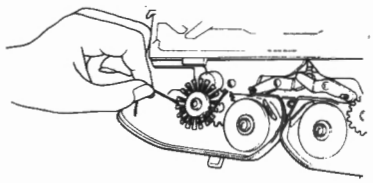


· Is the Sinker Plate Assembly joined correctly to the K-Carriage?



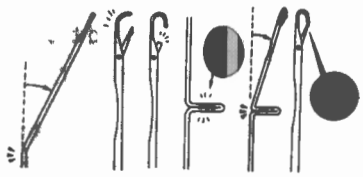
2.WHEN THE K-CARRIAGE FEELS HEAVY TO MOVE BACK AND FORTH

· Make sure that the Tension Dial and Tension Discs are adjusted according to the thickness of your yarn. (Tension Dial see page 6. Tension Disc see page 8.)
· Make sure that the machine is not damaged or dirty.
· If the machine needs oiling or cleaning refer to page 107.
· Make sure you have threaded the yarn correctly into the Yarn Tension Unit. (See page 8.)
· Make sure the yarn is flowing freely from the cone or ball.
· Make sure the Wheel Brushes are rotating freely. If there is yarn wrapped around these, you must remove it.

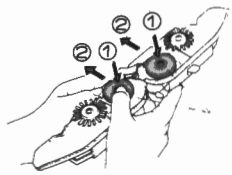


3.WHEN STITCHES ARE NOT FORMED CORRECTLY

· Is the needle bent or damaged? If so, change it for a new one. (See page 106.)

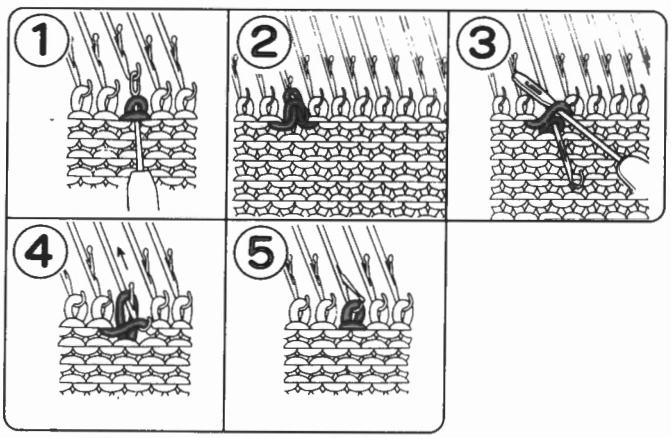


· Set the Rubber Wheels into working position ② if the yarn (e.g. cotton, acrylic) doesn't knit properly.
(1)Remove the Sinker Plate Assembly from the K-Carriage and turn it over.
(2)Push the Rubber Wheels into working position ②.

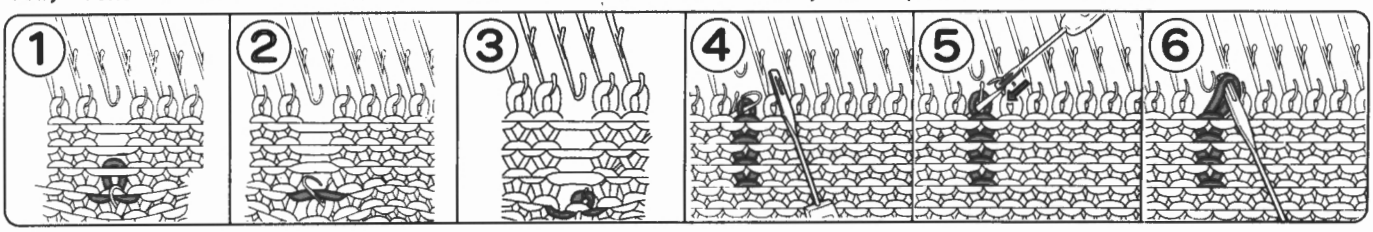


4.HOW TO PICK UP A DROPPED STITCH

· Repairing a dropped stitch
Insert the Transfer Tool into the stitch on the row below the dropped stitch. Remake the dropped stitch as illustrated.



· Repairing a stitch that has dropped several rows
Use the Latchet Tool from behind, and hook up the bottom stitch. Remake the dropped stitches row by row. On the final row, transfer the stitch from the Latchet Tool to a Transfer Tool, and replace it onto the needle.



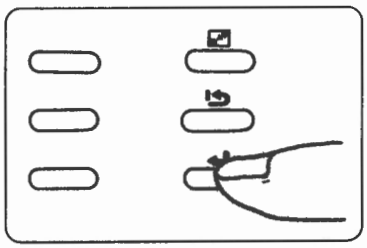
WHAT TO DO IF YOU MAKE MISTAKES IN STOCKING STITCH AND PLATING

WHEN NOT USING (GARMENT POSITION INPUT)

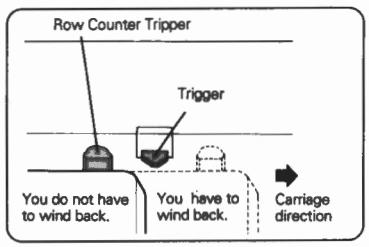
1. IF THE K-CARRIAGE SHOULD JAM

· Do not attempt to move the K-Carriage by force. Proceed as follows:

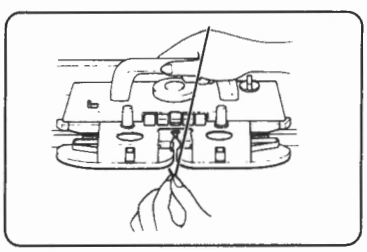
① Push ↵ key, and the stop screen appears.



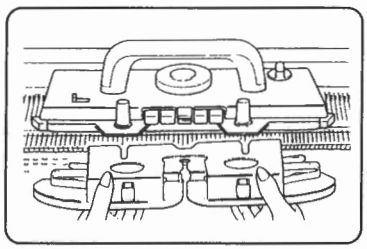
② Check if the K-Carriage has stopped before passing the Trigger. *You do not need to count the last row if the Row Counter Tripper and the Knit Leader Tripper did not operate e.g. the K-Carriage has not passed the Trigger.



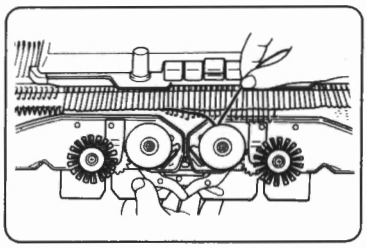
③ Take the yarn out of the Yarn Feeder.



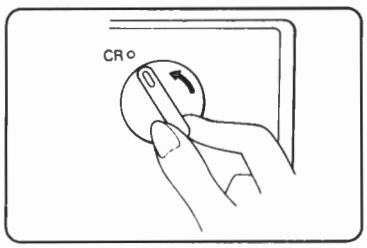
④ Loosen the knobs and remove the Sinker Plate Assembly.



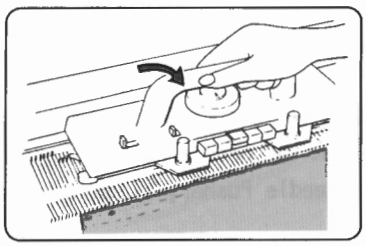
⑤ Untangle any yarn that has become wrapped around the Wheels.



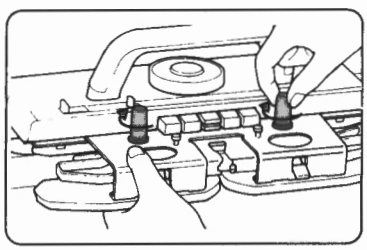
⑥ Set the Change Knob to CR to release the K-Carriage from the machine.



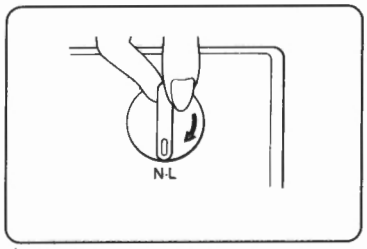
⑦ Lift up the K-Carriage to remove.



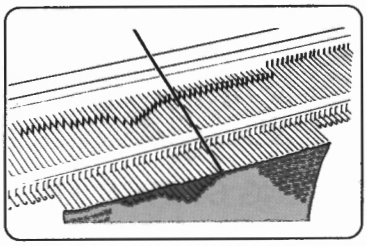
⑧ Place the K-Carriage onto either of the Extension Rails. Screw the Sinker Plate Assembly back onto the K-Carriage.



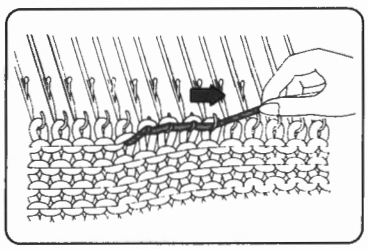
⑨ Set the Change Knob to N.L.



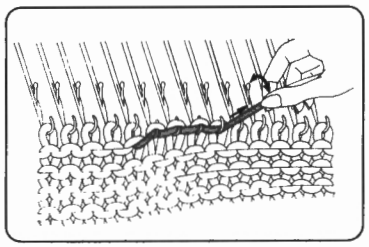
⑩ Using your Transfer Tool, replace any stitches that are on the stems of the needles back into the hooks, so that they will not drop off. (See REPLACING STITCHES on page 98.)



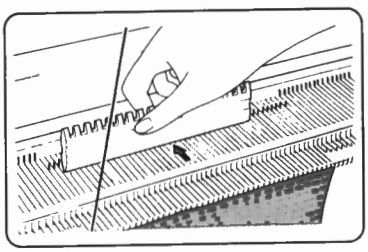
⑪ Pull the yarn sideways slightly so that it becomes tight in the needle hooks.



⑫ Now pull the yarn in an upwards direction to unravel the knitting. The stitch are undone and those from the row below will slip into the needle hooks.
Work a few stitches at a time and repeat Steps ⑪ - ⑫ across the row.

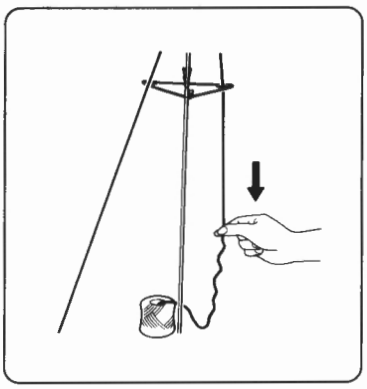


⑬ After unravelling a row check that all the stitches are in the needle hooks. Using the flat side of the 1 x 1 Needle Pusher, align the needles in B position.



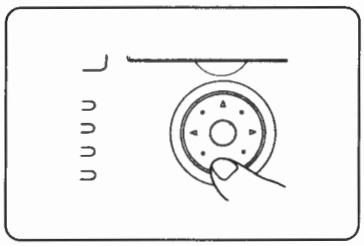
⑭ Pull down the loose unravelled yarn from behind the Rear Yarn Guide.

※To unravel several rows of knitting, repeat Steps ⑪ - ⑭.

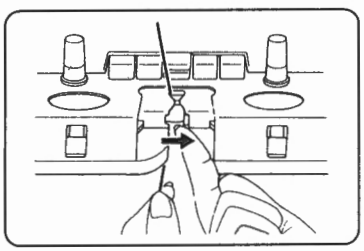


⑮ Wind back the Knit Leader (if used) by the number of rows you have unravelled.

⑯ Push the ▽ Down key by the number of rows you have unravelled.

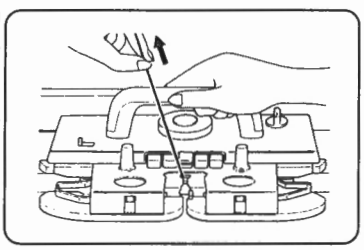


⑰ Make sure the K-Carriage is placed outside the Position Sensor at the same side as the yarn. Thread up the yarn into Feeder "A".



⑱ Push ↵ key, and the knitting screen appears.

⑲ Continue knitting with the K-Carriage, pulling the yarn slightly on the first row to remove any slackness.

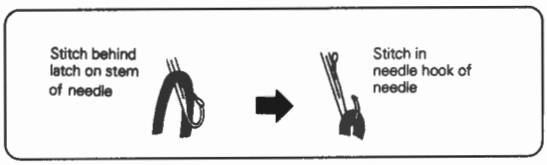


2. IF YOU WANT TO UNRAVEL SOME KNITTING
(WHEN THE CARRIAGE HAS GONE PAST THE END OF THE KNITTING)

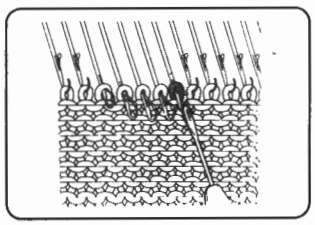
① Push ↵ key to load the stop screen.

② Follow Steps ⑪ - ⑲ in the above instructions.

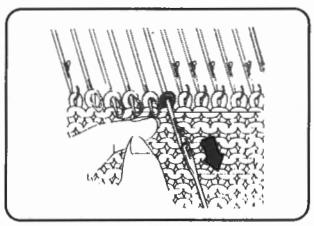
REPLACING STITCHES INTO NEEDLE HOOKS



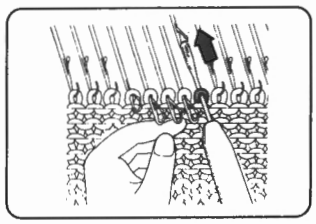
(1)Place the eye of the Transfer Tool into the hook of the needle.



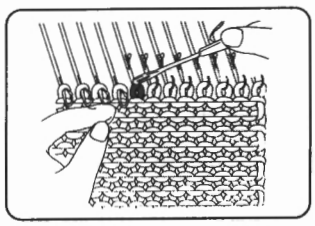
(2)Hold the Transfer Tool in line with the needle and pull it towards you.



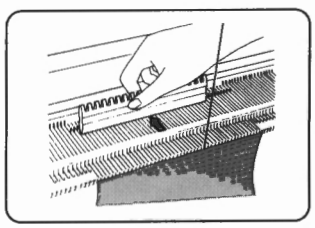
(3)Push the Transfer Tool away from you towards the machine until the stitch is on the Transfer Tool.



(4)Transfer the stitch into the hook of the needle.



(5)When all stitches are safely in the hooks of the needles, align all needles in B position using the flat side of the 1 x 1 Needle Pusher.



WHAT TO DO IF YOU MAKE MISTAKES IN STOCKING STITCH AND PLATING WHEN USING (GARMENT POSITION INPUT)

1.IF THE K-CARRIAGE SHOULD JAM

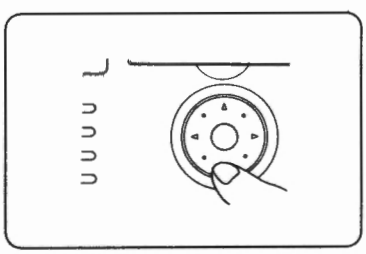
· Do not attempt to move the K-Carriage by force. Proceed as follows:

① Follow the Steps ① - ⑭ on page 96-97.

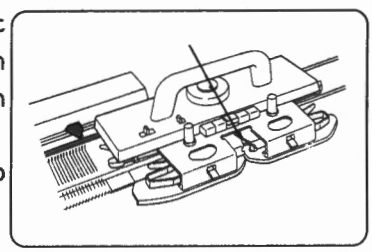
② Check how many rows you have unravelled. (You do not need to count the last row if the Row Counter Tripper did not operate e.g. if the K-Carriage is stopped before passing the Trigger.)

③ Push the ▽ Down key by the number of rows you have unravelled.

NOTE:Check the knitting width on the Display corresponds to the needles in B position on the Needlebed.

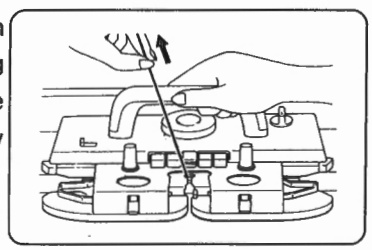


④ Place the K-Carriage at the same side as the yarn end outside the Position Sensor.
Thread up the yarn into the Yarn Feeder.



⑤ Push ↵ key, and the knitting screen appears.

⑥ Continue knitting with the K-Carriage, pulling the yarn slightly on the first row to remove any slackness.



2. IF YOU HAVE FORGOTTEN TO INCREASE OR DECREASE STITCHES WHILE KNITTING

① Finish the row you are knitting and place the K-Carriage outside the Position Sensor.

② Make a note of the garment row number shown on the Display.

③ Push ↵ key, and the stop screen appears.

④ Push the ▽ Down key until the knitting width on the Display corresponds to the needles in B position on the Needlebed.

⑤ Push the △ Up key once after the knitting width corresponds to the needles in B position.

⑥ Subtract the number of rows shown on the Display number written down at Step ②. Unravel the rows as many as you have found. Then, align the needles to B position.

⑦ Place the K-Carriage at the same side of the yarn end outside of the Position Sensor. Thread up the yarn into the Yarn Feeder.

⑧ Push ↵ key, and the knitting screen appears.

⑨ Knit your pattern according to the indication on the Display.

3. IF YOU WANT TO UNRAVEL SOME KNITTING

(WHEN THE CARRIAGE HAS GONE PAST THE END OF THE KNITTING)

① Push ↵ key, and the stop screen appears.

② Unravel the rows required.

③ Follow the Steps ③ - ⑥ on page 98.

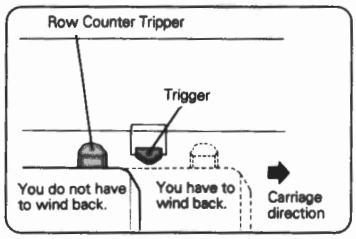
※When the knitting is not placed at the centre of the Needlebed, do the following steps.

① Push ↵ key, and the stop screen appears.

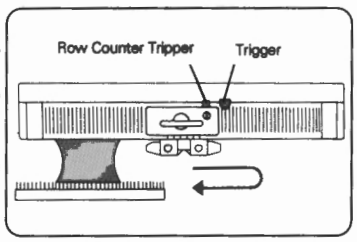
② Check where the K-Carriage has stopped.

a. The Row Counter Tripper on the K-Carriage has not passed the Trigger after knitting the last row.

b. The Row Counter Tripper on the K-Carriage has passed the Trigger after knitting the last row.



c. The Row Counter Tripper on the K-Carriage has passed the Trigger before knitting the next row.



③ Unravel the row required.

④ Push the ▽ Down key according to the following table.

a	Number of rows unravelled - 1
b	Number of rows unravelled
c	Number of rows unravelled + 1

※Check the knitting width on the Display corresponds to the needles in B position on the Needlebed.

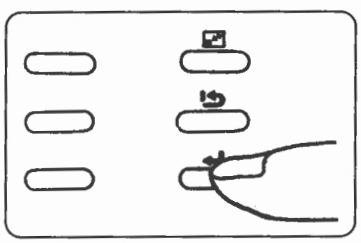
⑤ Follow the Steps ④ - ⑥ on page 98.

WHAT TO DO IF YOU MAKE MISTAKES IN PATTERN KNITTING

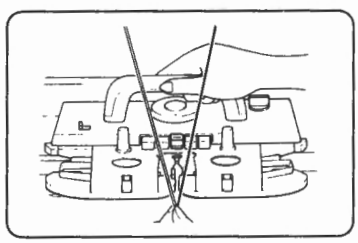
1. IF THE K-CARRIAGE SHOULD JAM

· Do not attempt to move the K-Carriage by force. Proceed as follows:

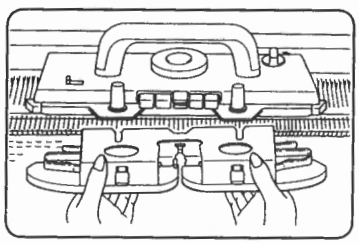
① Push ↵ key, and the stop screen appears.



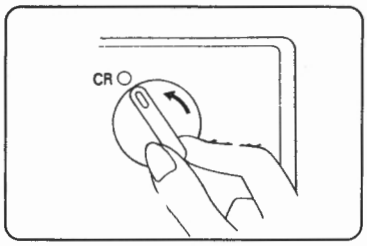
② Take the yarn out of the Yarn Feeder.



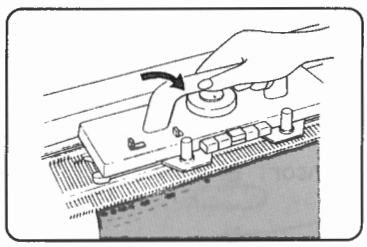
③ Loosen the knobs and remove the Sinker Plate Assembly.



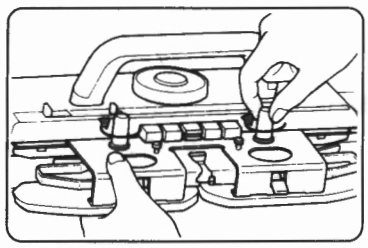
④ Set the Change Knob to CR to release the K-Carriage from the machine.



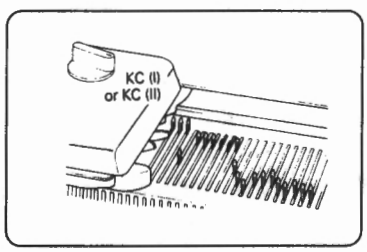
⑤ Lift up the K-Carriage to remove. Place the K-Carriage onto either of the Extension Rails. Set the Change Knob to N.L.



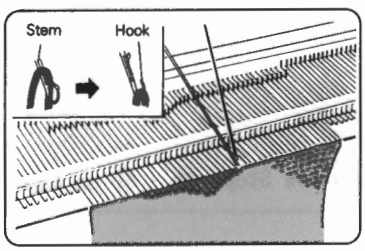
⑥ Screw the Sinker Plate Assembly back onto the K-Carriage.



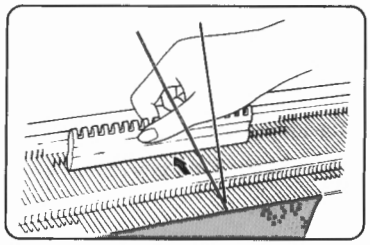
⑦ If some needles have slipped back down the Needlebed, set the Change Knob to KC(I) or KC(II) and slide the K-Carriage back and forth across the Needlebed at the side of your knitting, do not go over needles in working position. This will bring the needles back into the correct position.



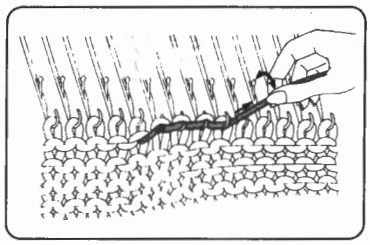
⑧ Using your Transfer Tool, replace any stitches that are on the stems of the needles back into the hooks, so that they will not drop off. (See REPLACING STITCHES on page 98.)



⑨ Using the flat side of the 1 x 1 Needle Pusher, align the needles in B position.

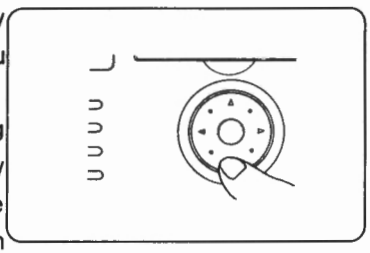


⑩ Pull the yarn to unravel knitting. After unravelling a row check that all the stitches are in the needle hooks. Using the flat side of the 1 x 1 Needle Pusher, align the needles in B position. (Even if you stopped the last row in the middle, you must count this as one row.)



⑪ Push the ▽ Down key by the number of rows you have unravelled.

※ Check the knitting width on the Display corresponds to the needles in B position on the Needlebed.



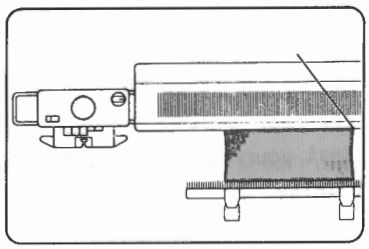
⑫ Wind back the Knit Leader (if used) by the number of rows you have unravelled.

※You do not need to count the last row if the Knit Leader Tripper did not operate.

Check the knitting width on the sheet corresponds to the needles in B position.

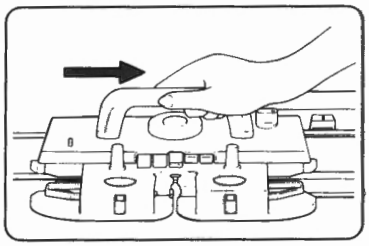
NOTE:When you use GARMENT POSITION INPUT...
All indications on the Display automatically change by pushing the ▽ Down key.

⑬ Make sure the K-Carriage is placed outside the Position Sensor opposite the yarn.To select the needles, push the both PART Buttons and set the Change Knob to KC(I) or KC(II).

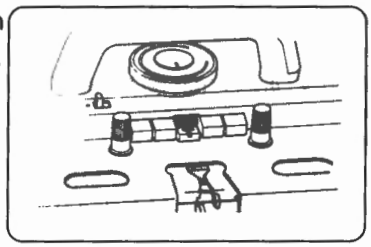


⑭ To select the needles move the K-Carriage across the knitting, with the Yarn Feeder empty.

※If you are using the Knit Leader, set the Tripper to NON working position.



⑮ Push the Cam Button according to the pattern.

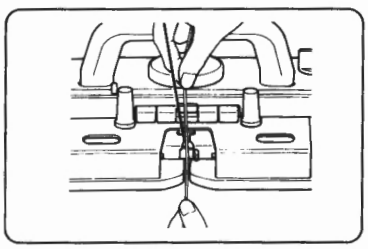


⑯ Push ↵key, and the knitting screen appears.

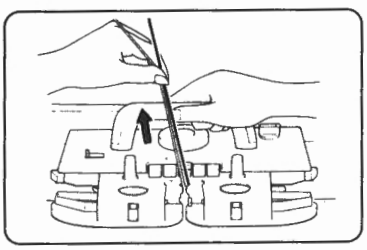
⑰ Thread up the yarn into Feeder "A".

※If you are using contrast yarn or weaving yarn, don't forget to thread this up as well.

※ Put the Knit Leader Tripper back in operation.



⑱ Continue knitting with the K-Carriage, pulling the yarn slightly on the first row to remove any slackness.



2. IF YOU HAVE FORGOTTEN TO INCREASE OR DECREASE STITCHES WHILE KNITTING

(WHEN USING GARMENT POSITION INPUT)

① Follow the Steps ① - ⑥ on page 99.

② After unravelling rows place the K-Carriage at the opposite side of yarn end outside the Position Sensor.

③ Follow the Steps ⑬ - ⑰ on page 100.

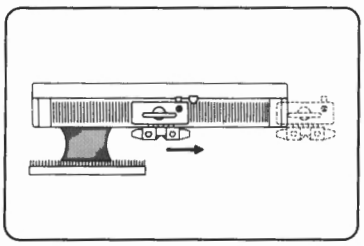
④ Knit your pattern according to the indication on the Display.

3. IF YOU WANT TO UNRAVEL SOME KNITTING

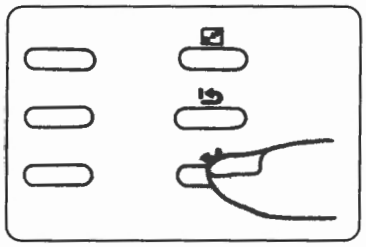
(WHEN THE CARRIAGE HAS GONE PAST THE END OF THE KNITTING)

① Check whether the Row Counter Tripper on the K-Carriage has passed across the Trigger.

※Finish the row if the Tripper has not passed across the Tripper.



② Push↵key, and the stop screen appears.
Place the K-Carriage outside the Position Sensor.

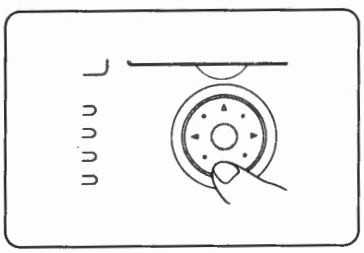


③ Make sure that the direction indication for the K-Carriage shows its current pattern row or next row. Follow each step according to the indication.

●When the indication shows the opposite direction to which the K-Carriage is moving...
It shows current pattern row.

④ Unravel the knitting.

⑤ Push the ▽ Down key by the number of rows you have unravelled.

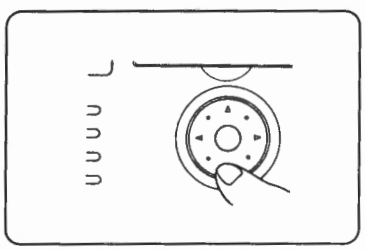


⑥ Follow Steps ⑫ - ⑱ on page 100.

● When the indication shows the same direction as the K-Carriage is moving...
It shows the next pattern row.

④ Unravel the knitting.

⑤ Push the ▽ Down key by the number of rows you have unravelled + 1.



⑥ Follow Steps ⑫ - ⑱ on page 100.

4. IF THE SELECTED NEEDLES ARE PUSHED BACK BY MISTAKE

① Follow the Steps ① - ③ of IF YOU WANT TO UNRAVEL SOME KNITTING on page 101.

② When the indication shows the next pattern row, push the ▽ Down key once.

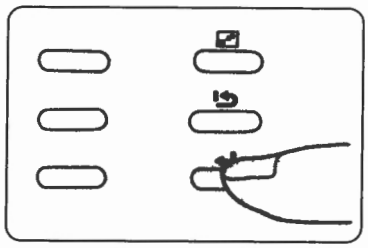
③ Push the needles into B position.
After take the yarn out of the Yarn Feeder, follow the Steps ⑬ - ⑱ of 1. IF THE K-CARRIAGE SHOULD JAM on page 100.

WHAT TO DO IF YOU MAKE MISTAKES IN LACE OR FINE LACE PATTERN KNITTING

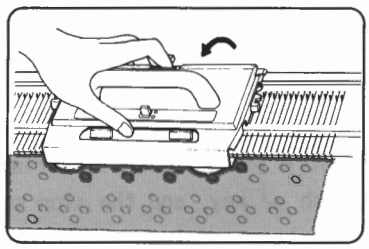
1. IF THE L-CARRIAGE SHOULD JAM

· Do not attempt to move the L-Carriage by force. Proceed as follows:

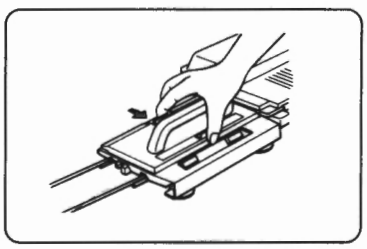
① Push ↵ key, and the stop screen appears.



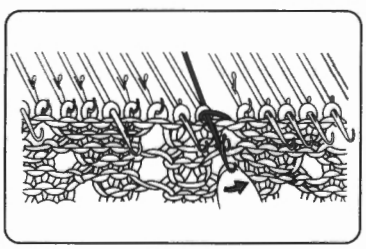
② Remove the L-Carriage by pushing the Release Button. If the L-Carriage is caught on the needles, take care when removing it.



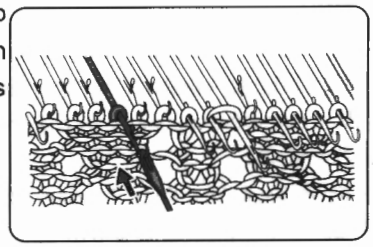
③ Place the L-Carriage securely on the left Extension Rail.



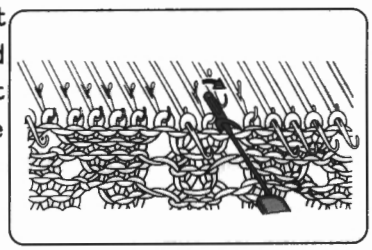
④ If the needles are caught over each other, separate them by lifting the tips as shown right.



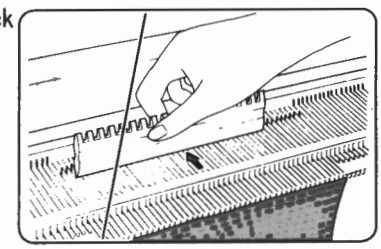
⑤ Use the Transfer Tool to replace any stitches on the stem of the needles back in the hooks.



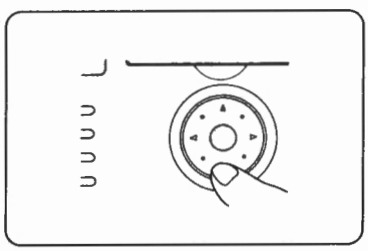
⑥ Return any stitches that have been transferred back onto the adjacent needles using the Transfer Tool.



⑦ Bring all needles back to B position.



⑧ Push the ▽ Down key once, the indication of the pattern row returns to the next row of the latest stocking stitch.



⑨ Move the L-Carriage one row outside the right Position Sensor.

⑩ Push ↵ key, and the knitting screen appears. Continue knitting, operating the L-Carriage and K-Carriage according to the memo information.

2. IF YOU WANT TO UNRAVEL SOME KNITTING

① Push ↵ key, and the stop screen appears.

② Follow the Steps ⑥ - ⑦ on page 102 when the L-Carriage has been operated. Push the ▽ Down key until any number appears in the memo.

③ Unravel the stocking stitch rows referring to Steps ⑪ - ⑭ on page 97.

④ If you unravel some more rows, push the ▽ key once. When number appears in the memo, unravel one row. When no number appears in the memo, repeat the above Steps ② and ③.

※ Wind back the Knit Leader if necessary.

※ Check the knitting width on the Display corresponds to the needles in B position on the Needlebed.

⑤ Make sure the K-Carriage is placed at the same side as the yarn. Thread up the yarn into Feeder "A".

⑥ Push ↵ key, and the knitting screen appears.

⑦ Knit the rows according to the number of rows shown on the Display. (The K-Carriage is placed at right after knitting the rows.)

⑧ Continue knitting, operating the L-Carriage and the K-Carriage according to the memo information.

3. IF YOU HAVE FORGOTTEN TO INCREASE OR DECREASE STITCHES WHILE KNITTING

(WHEN USING GARMENT POSITION INPUT)

① Finish the row you are knitting and place the K-Carriage on the right Extension Rail and the L-Carriage on the left Extension Rail.

② Follow the Steps ② - ⑨ of IF YOU HAVE FORGOTTEN TO INCREASE OR DECREASE STITCHES on page 99.

※Unravel rows referring to the above Steps of IF YOU WANT TO UNRAVEL SOME KNITTING.

4. IF THE K-CARRIAGE SHOULD JAM IN LACE OR FINE LACE PATTERN

(WHEN USING GARMENT POSITION INPUT)

① Follow Steps ① - ⑤ on page 98.

② Knit the rows by the number shown on the Display, with the K-Carriage. (The K-Carriage is placed at right after knitting the rows.)

③ Continue knitting, operating the L-Carriage and the K-Carriage according to the memo information.

5. IF YOU OPERATE THE K OR L CARRIAGE FOR EXTRA ROW

· If you operate the K or L Carriage for extra row, the error message will appear on the Display, with the sound "beep". In this case, the rows or the data on the Display will not advance.

① If the error message "10" or "11" should appear, place the K-Carriage outside the right Position Sensor and the L-Carriage outside the left Position Sensor.

② If you have operated the K-Carriage, unravel rows following Steps ③ - ⑭ on page 96.
If you have operated the L-Carriage, return the selected needles from D to B position.

③ Push ↵ key, and the error message disappears and the knitting screen reappears.

④ Operate the K-Carriage and the L-Carriage according to the memo information.

6. IF THE SELECTED NEEDLES ARE PUSHED BACK BY MISTAKE

· Before you turn the L-Carriage for the next row...

① Push ↵ key, and the stop screen appears.

② Bring the selected needles from D to B position.

③ Move the L-Carriage to the other side and place it outside the Position Sensor.
Move the L-Carriage to select the needles.

④ Push ↵ key, and the knitting screen appears.

⑤ Operate the L-Carriage and the K-Carriage according to the memo information.

· After you have turned the L-Carriage for the next row...
Follow the Steps of IF THE L-CARRIAGE SHOULD JAM on page 102.

WHAT TO DO IF YOU CANNOT REMEMBER HOW MANY ROWS YOU HAVE UNRAVELLED

① Push the ☑ Screen Change key to load the pattern diagram.

② Find which row has been knitted last by moving the pattern diagram with the ▽ Down key.

③ Set the row which should be knitted next to the mark ▶ at the left side of the diagram.

④ Follow the Steps ⑬ - ⑱ on page 100.

※When you are knitting a pattern using pattern variation, the diagram will show the changed pattern.

WHAT TO DO IF THE NEEDLES ARE SELECTED INCORRECTLY

Check the following points:

· Make sure you have programmed [↶] (PATTERN POSITION INPUT) correctly.

· Make sure you have set the K-Carriage correctly and you began with it outside a Position Sensor on the first row of the pattern.

· Make sure the K-Carriage passed the centre of the machine (needle Green 1) on every row. If the Carriage is returned without passing the centre of the Needlebed, the same needle selection will appear again. If this is what you have done wrong, correct the needle selection as follows:

(1)Place the Carriage outside the Position Sensor.

(2)Place all selected needles in B position.

(3)Take the Carriage across to the other side of the Needlebed. If you use the K-Carriage, push both PART Buttons.

(4)Place any selected needles in B position.

(5)Move the K-Carriage across the Needlebed again, this time to get the correct needle selection.

(6)Push the ⮌ Main menu key. Set the correct garment row with (GARMENT ROW NO. SET-UP), or the correct row number with (ROW COUNTER SET-UP).

(7)Select (KNITTING) to return the knitting screen.

(8)Push the Cam Buttons according to your pattern, check the yarn in the Yarn Feeder and continue knitting.

WHAT TO DO IF THE NEEDLES ARE NOT SELECTED AND REMAIN AT B POSITION

Check the following points:

· Make sure you have set the K-Carriage correctly and you began with it outside a Position Sensor when starting to pattern knit or after correcting the row.

· When you began to pattern knit again after moving the K-Carriage outside the Position Sensor, did the K-Carriage pass the Position Sensor after setting the Change Knob to KC(I) or KC(II)?
If the K-Carriage did not pass the Position Sensor, correct this as follows:

(1)Unravel the knitting down to a correct row.

(2)Place the K-Carriage outside the Position Sensor on the opposite side of the Needlebed to the yarn end.

(3)Set the Change Knob to KC(I) or KC(II) and push both PART Buttons.

(4)Move the K-Carriage from outside the Position Sensor across the Needlebed to select the needles.

WHAT TO DO IF ELECTRIC POWER IS CUT OFF WHILST YOU ARE KNITTING

1.If the electric power is cut off when the K-carriage is knitting on a swatch or if you knit several rows after electric power is cut off.

①Finish the row you are knitting and place the K-Carriage outside the Position Sensor.

②Turn on the power.

③ Push↵key, and the stop screen appears.

④Unravel the knitting down to a row of correct pattern knitting. Unravel one more row and place the needles in B position.

⑤Push the ▽ Down key once.

⑥ Place the K-Carriage outside the Position Sensor, opposite the yarn end. Push both PART Buttons and operate the K-Carriage. The needles are selected.

⑦Push↵key, and the knitting screen appears.

⑧Push the Cam Buttons according to your pattern, check the yarn in the Yarn Feeder and continue knitting.

2.If the electric power is cut off when the L-Carriage is operating

①Finish the row you are working, then remove the L-Carriage and place it on the left Extension Rail.

②Turn on the power.

③Push↵key, and the stop screen appears.

④Return any stitches that have been transferred back onto the adjacent needles. Bring all needles back to B position.

⑤Push the ▽ Down key once.

⑥Push↵key, and the knitting screen appears.

⑦Operate the K and L Carriages according to the memo information.

3.If the electric power is cut off when K- or L-Carriage is outside of the knitting

①Turn on the power.

②Move the K- or L-Carriage across the Position Sensor and continue knitting.

WHAT TO DO IF THE ELECTRIC POWER IS CUT OFF WHILE YOU ARE ENTERING PATTERN DATA

If you have been using the pattern creating screen,select (PATTERN MODIFICATION), select the pattern you were working on and continue entering data. If you have not started using the pattern creating screen, select (PATTERN CREATION) to enter pattern data.

WHAT TO DO IF THE ELECTRIC POWER IS CUT OFF WHILE YOU ARE ENTERING GARMENT DATA

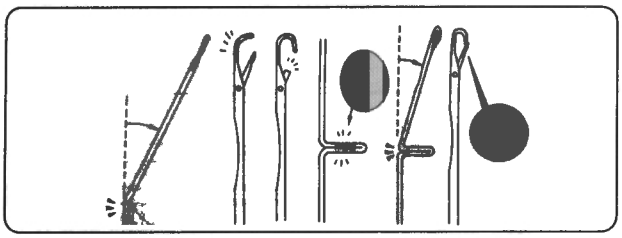
If you have reached the screen of S1 (STAGE 1), select (GARMENT ALTERATION) and continue drawing your garment diagram. If you have not reached the screen of S1 (STAGE 1), select (GARMENT CREATION) and continue drawing your garment diagram.

WHAT TO DO IF YOU FEEL THE MESSAGE ON THE DISPLAY IS NOT VISIBLE ENOUGH

· Adjust the Brightness Controller.
Consult your dealer to change the Back Light if you cannot see or read the message after adjusting the Brightness Controller.

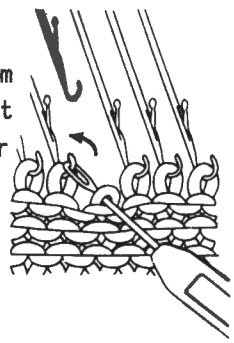
NOTE : The Back Light is used while turning on the Power Switch of the CB-1. So, it is recommended to turn off the Power Switch when you do not use the CB-1.

IF A NEEDLE IS DAMAGED

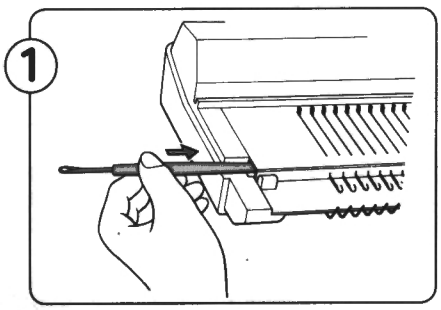


●Needles that are bent, broken or damaged will cause problems during knitting. If you experience dropped or badly knitted stitches you should check the needles and replace any faulty ones immediately. In an emergency if you have no spare needles, use one from the extreme edge of the Needlebed.

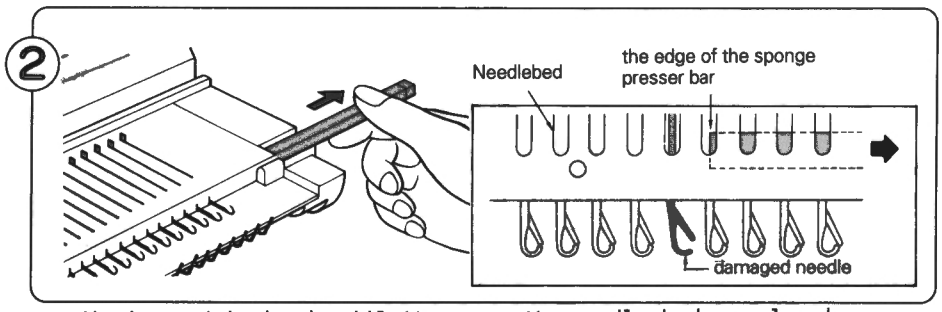
If you need to replace a needle whilst you have knitting on the machine, transfer the stitch from the faulty needle onto an adjacent needle. Replace the stitch after you have completed the needle replacement.



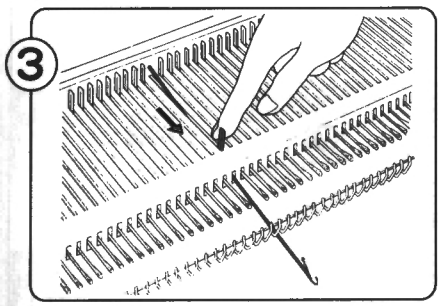
● REPLACING A NEEDLE



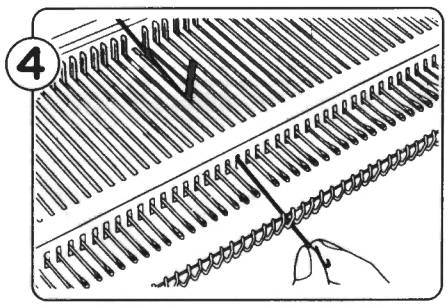
Push one end of the Sponge Presser bar with the handle of your Latchet Tool until the other end comes out of the Needlebed.



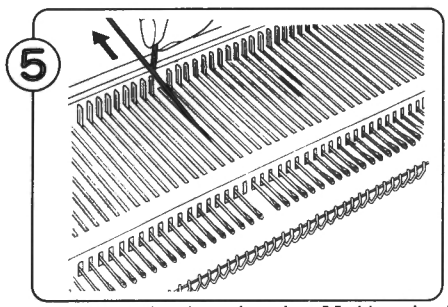
Draw the bar out by hand until it passes the needle to be replaced.



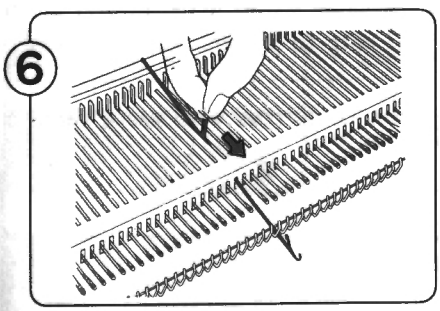
Push the faulty needle forward to E position as far as it will go.



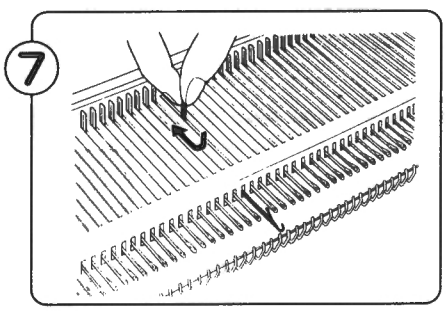
Press down the hook end so that the shank end of the needle is raised clear of the Needlebed.



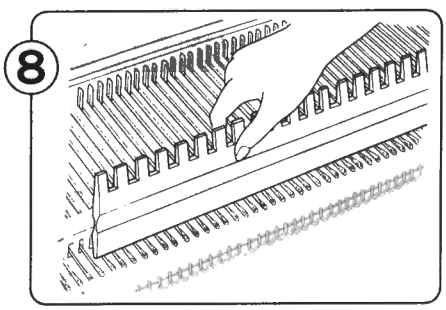
Catch the shank end and pull it out of the Needlebed with the latch closed.



With the latch open, insert the new needle.



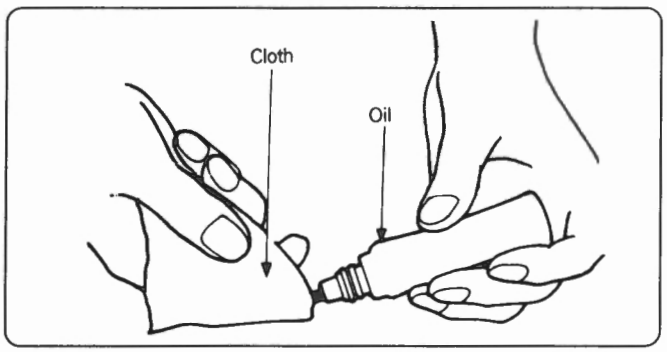
Return needle to A position.



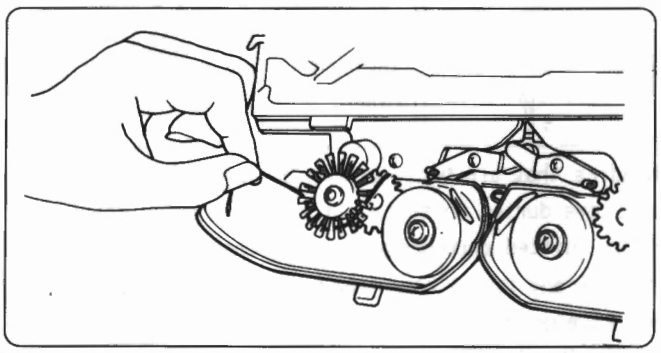
Holding the needles down with your hand or the flat side of your 1/1 Needle Pusher, push the Sponge Presser Bar back in place.

CLEANING AND MAINTENANCE

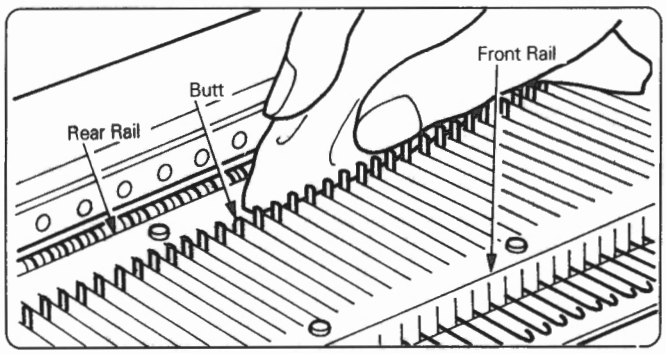
※Do not use alcohol, benzine, thinners or petrol!



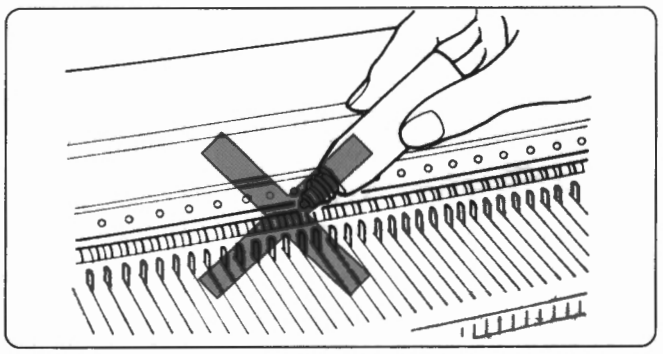
Wipe the metal parts with an oily cloth and clean plastic parts with a soft cloth and mild, neutral detergent.



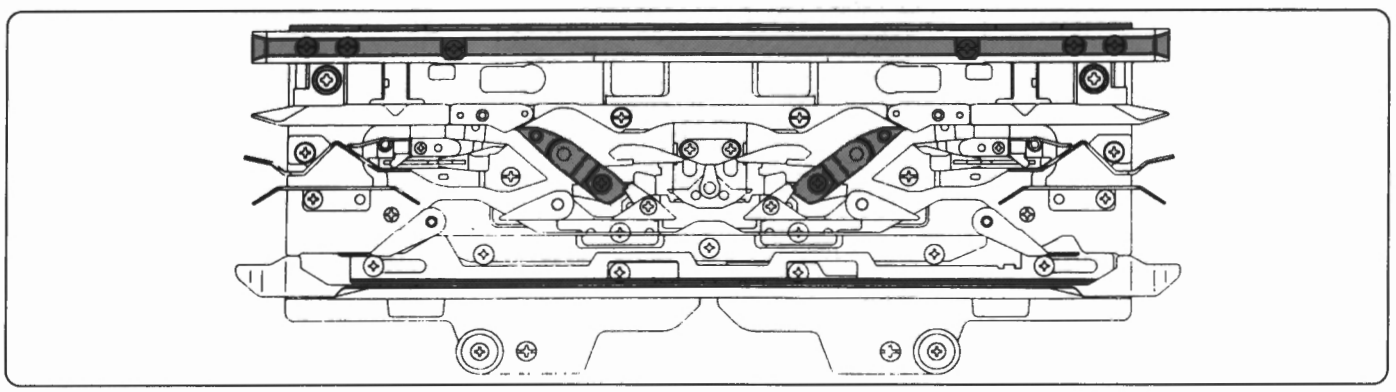
Remove the K- and L-Carriages from the Needlebed and brush away any dust or fluff. Check that the brushes are free from fluff or strands of yarn, and that they revolve smoothly.



Arrange all needles in B position and clean the butts, rear and front rails as shown, using an oily cloth.



Do not put oil directly onto the machine.
Do not use silicone spray on your machine.



Should the K-Carriage feel heavy to operate, you should clean and lubricate the areas indicated above, using an oily cloth.
If you regularly clean and lightly oil your machine, it will make knitting easier and help to prevent excessive wear.

☆ When you come to use your machine again after you have stored it for a while, knit 20-30 rows with waste yarn to clean away and dirty oil.

WHAT TO DO WHEN AN ERROR MESSAGE APPEARS

· Please consult the following table when an error message appears.
· Push ↵ key, and the error message disappear and the previous screen reappears.

(Numbers are shown below as examples.)

Message	Cause	Remedy
E 1 TURN OFF SWITCH. CHANGE TO PROPER ADAPTER.	You attempted to use a high voltage adapter.	Turn off the power switch immediately. Change to the adapter for KH970 use.
E 2 DATA HAS BEEN DAMAGED.	The battery in the CB-1 has been used up.	Consult your dealer to change the battery.
	The CB-1 itself has some defects.	Consult your dealer to check them.
	The cartridge itself or the data in entered Page No. has some defects.	Delete the data in (CARTRIDGE DELETE). Start all over again. If the error message reappear, consult your dealer to check it. ※The data in the other page may not be damaged. See page 83 and 84.
E 3 YOU CAN ENTER ROW NUMBER UP TO 123.	You attempted to enter a larger row number than the top row of garment.	Reenter the row number within a number shown on the Display. See page 19.
E 4 YOU CAN ENTER ROW NUMBER UP TO 12.	You attempted to enter a larger row number than the top row of pattern.	Reenter the row number within a number shown on the Display. See page 19.
E 5 PATTERN HAS NOT BEEN POSITIONED IN COMPUTER.	You attempted to set up the row number of the pattern which has not been positioned.	Position the pattern first in (PATTERN POSITION INPUT). See page 21 - 24.
	You have not entered (PATTERN POSITION INPUT).	You do not need to select (PATTERN POSITION CANCEL). See page 25.
E 6 CB-I AND KM BODY ARE NOT CONNECTED.	The CB-1 and the knitting machine have not been connected yet.	· Turn off the Power Switch of the CB-1. Connect it with the knitting machine. · Push ↵ key, and operate the CB-1. See page 3.
E 7 PATTERN NO.901 HAS NOT BEEN COMPLETED.	You have not completed creating or modifying Pattern No.901.	Select Pattern No.901 in (PATTERN MODIFICATION) and select OK(YES) in END CREATION. See page 36.
E 8 GARMENT NO. 1 HAS NOT BEEN COMPLETED.	You have not completed creating or altering Garment No.1.	Select Garment No.1 in (GARMENT ALTERATION) and select OK(YES) in END CREATION. See page 42 and 43.
E 9 PLEASE KNIT MORE SLOWLY.	You attempted to move the Carriage fast.	Place the Carriage outside a Position Sensor and move it more slowly.
E10 YOU ARE OPERATING WRONG CARRIAGE. USE K-CARRIAGE.	You attempted to operate the wrong Carriage.	Place the K-Carriage outside a Position Sensor and operate it properly. Check the Change Knob is set correctly.
E11 YOU ARE OPERATING WRONG CARRIAGE. USE L-CARRIAGE.	You attempted to operate the wrong Carriage.	Place the L-Carriage outside a Position Sensor and operate it properly.
E12 ENTERED PATTRRN HAS NOT BEEN FOUND IN COMPUTER.	The entered Pattern No. cannot be found in the computer.	Reenter a correct Pattern No. See page 21 - 24.

Message	Cause	Remedy
13 ENTERED PATTERN IS NOT LACE PATTERN.	You have entered Pattern No. which is not Lace pattern.	Push ↩ key, then re-enter (PATTERN POSITION INPUT). See page 21 - 24.
	You have entered improper memo in lace pattern.	Correct the memo referring to page 44-45. See page 44 and 45.
14 ENTERED NUMBER IS OUTSIDE NUMBER OF NEEDLES.	Entered Pattern Position exceeds the number of needles.	Enter a correct Pattern Position. See page 21 - 24.
15 ENTERED NUMBER IS OUTSIDE NUMBER OF NEEDLES.	Entered Garment Position exceeds the number of needles.	Enter a correct Garment Position. See page 25 and 26.
16 GARMENT WIDTH IS BEYOND NUMBER OF NEEDLES.	Entered Garment Position exceeds Needle No. R100(Green 100). You attempted to place the right side of garment beyond R100.	Enter a correct Garment Position. See page 25 and 26.
17 THIS NUMBER OF STITCHES CANNOT BE ENTERED.	You have entered more than 200 as the number of stitches.	Enter less than 200. See page 34.
18 THIS NUMBER OF ROWS CANNOT BE ENTERED.	Entered number of rows exceeds the maximum shown on the Display.	Enter a smaller number than one shown on the Display. ※If you delete unnecessary pattern or garment created, you may get more rows for pattern creation. · Maximum Black/White pattern : 998 rows · Maximum 3-colour in a row pattern : 332 rows · Maximum 4-colour in a row pattern : 248 rows See page 34.
19 GARMENT HAS NOT BEEN STORED IN COMPUTER.	You have not created any garment.	Create a garment in (GARMENT CREATION). See page 37 - 42.
20 THIS GARMENT CANNOT BE USED.	Entered garment cannot be used with this knitting machine.	Select a proper garment.
21 NUMBER OF NEEDLES IS INSUFFICIENT.	Entered garment width needs more than 200 needles.	Change the tension square or modify the garment width. See page 42 and 71.
22 GARMENT HAS NOT BEEN POSITIONED IN COMPUTER.	You have not entered (GARMENT POSITION INPUT).	You do not need to select (GARMENT POSITION CANCEL). See page 26.
23 MEMORY CAPACITY FOR CREATION IS COMPLETELY FULL	· The memory for creation of pattern/garment is full. · You have created 98 patterns or garments.	Delete unnecessary patterns or garments. See page 36 and 44.
24 TOO MANY COLOURS HAVE BEEN USED. ROW: 6	You have used more colours than specified in 3/4-colour in a row pattern.	According to the row number shown, correct colouring. The error message appears again if a few rows have more colours. See page 33 - 36.
25 MEMO INFORMATION HAS BEEN DAMAGED.	You have changed the memo of 3/4-colour in a row pattern in (MEMO INFORMATION INPUT).	· Enter the original number of memo in (MEMO INFORMATION). · Push ↵ key, and return the pattern to original. See page 44 and 45.

Message	Cause	Remedy
#26 PATTERN HAS NOT BEEN STORED IN COMPUTER.	You have not created any pattern.	Select (PATTERN MODIFICATION) or (MEMO INFORMATION) after created your pattern. See page 33 - 36.
#27 POSITIONED GARMENT HAS BEEN DELETED.	You have modified the garment which had been positioned.	Enter the positioned data in (GARMENT POSITION INPUT) again. See page 25 and 26.
#28 ACCEPTABLE WIDTH MEASUREMENT IS UP TO 20.0.	You attempted to enter the width which exceeds the maximum.	Enter a correct number for the width. See page 37 - 42.
#29 ACCEPTABLE LENGTH MEASUREMENT IS UP TO 20.0.	You attempted to enter the length which exceeds the maximum.	Enter a correct number for the length. See page 37 - 42.
#30 ACCEPTABLE DEPTH MEASUREMENT IS UP TO 3.8.	You attempted to enter the depth which exceeds the maximum.	Enter a correct number for the depth. See page 37 - 42.
#31 ENTERED MEASUREMENT IS TOO SMALL TO ENTER.	Entered number of the width or length is too small.	Enter a correct number for the width or length. See page 37 - 42.
#32 MEMORY CAPACITY OF GARMENT CREATION IS FULL.	The memory for creation of garment is now full.	Reduce the number of lines. If the error message does not disappear, you cannot knit this garment. See page 37 - 42.
#33 ENTERED DATA FOR GARMENT IS IMPROPER ONE.	You attempted to enter improper line or measurement at this stage.	Referring to the garment creation on page 39, enter a correct line or measurement. See page 39.
#34 CARTRIDGE IS NOT INSERTED INTO SLOT OF CB-1.	The cartridge has not been inserted into the slot of the CB-1.	Insert the cartridge securely.
#35 ENTERED DATA HAS NOT BEEN FOUND IN PAGE.	There is no data of pattern or garment in a cartridge or disk.	· Turn the power off and insert a proper cartridge. Start all over again. See page 84. · Check a disk and Page No. Insert a new disk or select proper Page No. See page 93.
#36 IMPROPER CARTRIDGE IS INSERTED IN SLOT OF CB-1.	You attempted to use a cartridge for other knitting machine.	Turn the power off and insert a proper cartridge.
#37 THIS PATTERN DATA CANNOT BE LOADED.	You attempted to load an incomplete pattern.	After completed a pattern, load it to the CB-1.
#38 DISK HAS NOT FORMATTED FOR THIS KNITTING MACHINE.	You attempted to use a disk for the other machines.	Use a proper disk. See page 92 - 94.
#39 FB-100 POWER SWITCH IS NOT ON.	· You have not turned on the FB-100 power switch. · The Interface Cable has not been connected. · The FB-100 is not working correctly.	Turn off the Power Switches of the CB-1 and FB-100. Connect them with the Interface Cable. Then, turn on both Power Switches. If the error message reappear, consult your dealer to check FB-100. See page 92.
#40 FB-100/CB-1 IS NOT WORKING CORRECTLY.	· The CB-1 or FB-100 is not working correctly. · The FB-100 has been placed near any electrical appliance except the knitting machine.	Turn off the Power Switches of the CB-1 and FB-100. Change the position of the FB-100. Turn on both Power Switches again. If the error message appears again, there is a defect in the CB-1 or FB-100. Consult your dealer.

Message	Cause	Remedy
41 DISK IS NOT INSERTED INTO FB-100.	A disk has not been inserted into the FB-100 properly.	Insert a disk properly.
42 DISK IS WRITE-PROTECTED.	You are using a write-protected disk.	Use another disk or disengage the protection.
43 DISK HAS NOT BEEN FORMATTED.	You are using a unformatted disk.	Use another disk or format a disk. See page 92.
44 DATA ON DISK IS NOT LOADED INTO COMPUTER.	There is a flaw across an inserted disk.	You cannot load the data on a disk.
45 THERE IS NO SPACE LEFT IN DISK TO SAVE DATA.	There is no space left on the disk to save the data.	· Use the disk after you have deleted an unnecessary page. · Use another disk. See page 92 - 94.
46 FLOPPY DISK IS NOT WORKING CORRECTLY.	You are using a defective disk.	· Use another page. · Use a new disk if the error message appears during formatting.
47 YOU HAVE CHANGED DISK TO ANOTHER IN FB-100.	You have changed a disk to another during operating.	Return to (DATA TRANSFER) in the main menu. Insert a proper disk and start all over again. See page 92 - 94.
48 CARRIAGE HAS NOT PASSED ACROSS TRIGGER.	The Carriage has not passed the Row Counter Trigger. So, the row has not advanced properly.	① Place the K-Carriage outside a Position Sensor. ② Push ↵ key, and the knitting screen appears. ③ Unravel the knitting until the pattern row shown on the Display comes out on the needles. Place the needles in B position. ④ Push both PART Buttons and set the Change Knob to KC(I) or KC(II). ⑤ Make sure the K-Carriage is placed opposite side of the yarn end. Move it across the Position Sensor and the Row Counter Trigger. ⑥ Thread up the yarn and push the Cam Button according to your pattern. Continue knitting.

☆Please read the original instruction manual for KH-970 in conjunction with the following instructions.

USEFUL HINTS

WHAT TO DO IF YOU HAVE KNITTED PATTERN INCORRECTLY

●While you are knitting without having knitted one side separately

〈When using the K-Carriage〉

(1)Place the K-Carriage outside the Position Sensor. Take the yarn out of the Yarn Feeder.
(2)Push ↵ key, and the stop screen appears. Unravel the knitting down to a row of correct pattern knitting.
(3)Examine the swatch to find how many rows you have knitted.
(4)Examine the swatch to find which row of the pattern has been knitted last.
(5)Find which row has been knitted last by moving the pattern diagram with the △ Up or ▽ Down key, on the Display.
(6)Set the row which should be knitted next to the ▶ mark at the left side of the diagram.
(7)Place the K-Carriage at the opposite side of the Needlebed to yarn end and place it outside the Position Sensor.
(8)Push both PART Buttons and set the Change Knob to KC(I) or KC(II).
(9)To select the needles move the K-Carriage across the knitting, with the Yarn Feeder empty. Push ↵ key, and the knitting screen appears.
(10)Select (ROW COUNTER SET-UP) or (GARMENT ROW NO. SET-UP), and push ↵ key. Enter the row number which you have already knitted.
(11)Select (KNITTING) and push ↵ key, and the knitting screen reappears.
(12)Push the Cam Button according to the pattern. Continue knitting, pulling the yarn slightly on the first row to remove any slackness.

〈When using the L-Carriage〉

(1)Place the L-Carriage outside the left Position Sensor and the K-Carriage outside the right Position Sensor. Take the yarn out of the Yarn Feeder.
(2)Push ↵ key, and the stop screen appears. Refer to page 103. Unravel the the knitting down to a row of correct pattern knitting. Return each stitch onto each needle. (Yarn end must be at right.)
(3)Examine the swatch to find how many row you have knitted.
(4)Examine the swatch which row of the lace pattern has been knitted.
(5)Find which row should be selected next by moving the pattern diagram with the △ Up or ▽ Down key, on the Display.
(6)Set the row to the ▶ mark at the left side of the diagram. (No number appears in the memo).
(7)Thread the yarn into Feeder.
(8)Push ↵ key, and the knitting screen appears.
(9)Select (ROW COUNTER SET-UP) or (GARMENT ROW NO. SET-UP), and push ↵ key. Enter the row number which you have already knitted.
(10)Select (KNITTING) and push ↵ key, and the knitting screen appears. Start moving the L-Carriage.

〈When using the G-Carriage〉

(1)Follow the Steps (1)-(5) of When using the K-Carriage.
(2)Set the row which you have found at Step (5) to the ▶ mark at the left side of the diagram.
(3)Move the G-Carriage to the yarn end and place it outside the Position Sensor.
(4)Push ↵ key, and the knitting screen appears.
(5)Select (ROW COUNTER SET-UP) or (GARMENT ROW NO. SET-UP), and push ↵ key. Enter the row number which you have already knitted.
(6)Select (KNITTING) and push ↵ key, and the knitting screen appears.
(7)Thread the yarn in the Yarn Guide and set the Carriage Direction Lever.

●While you are knitting after having knitted one side separately

〈When using the K-Carriage〉

(1)Place the K-Carriage outside the Position Sensor. Take the yarn out of the Yarn Feeder.
(2)Push ↵ key, and the stop screen appears. Unravel the knitting down to a row of correct pattern knitting.
(3)Find the row which has knitted last referring to the following instructions.

・WHEN USING GARMENT POSITION INPUT

① Select (GARMENT ROW NO. SET-UP) and enter the number 9999.
② After SSS mark appears, the error message "3" will appear. Write down the number shown on the Display.
③ Push ↵ key, and then enter the number which has been shown at Step 2.
④ Select (KNITTING), and push ↵ key. "KNITTING COMPLETED" appears on the Display.
⑤ Push ↵ key once, and "KNIT ONE SIDE" appears.
⑥ Select the side which you were knitting.
⑦ Find which row has been knitted by moving the pattern diagram with the △ Up key, on the Display.

・WHEN USING ROW MEMORY PROGRAM

① Select (ROW MEMORY RECALL), and push ↵ key.
② Select (ROW MEMORY INPUT), and push ↵ key.
③ Select (KNITTING), and the knitting screen returns to the condition when you have selected (ROW MEMORY INPUT).
④ Make sure that the stop screen appears on the Display.
⑤ Find which row has been knitted by moving the pattern diagram with the △ Up key, on the Display.

(4)Set the row which should be knitted next to the ▶ mark at the left side of the diagram.
(5)Place the K-Carriage outside the Position Sensor, opposite the yarn end.
(6)Push both PART Buttons and set the Change Knob to KC(I) or KC(II).

(7)To select the needles move the K-Carriage across the knitting, with the Yarn Feeder empty. Push ↵ key, and the knitting screen appears.
(8)Push the Cam Button according to the pattern. Continue knitting, pulling the yarn slightly on the first row to remove any slackness.

〈When using the L-Carriage〉
(1)Place the L-Carriage outside the left Position Sensor and the K-Carriage outside the right Position Sensor. Take the yarn out of the Yarn Feeder.
(2)Push ↵ key, and the stop screen appears. Refer to page 103. Unravel the row required. Return each stitch onto each needle. (The yarn end must be at right.)
(3)Follow the Step (3) of "When using the K-Carriage while you are knitting after having knitted one side separately". Examine the swatch which row of the lace pattern has been knitted.
(4)Find which row should be selected next by moving the pattern diagram with the △ Up key, on the Display. Set the row to the ▶ mark at the left side of the diagram. (No number appears in the memo).
(5)Thread up the yarn in Feeder. Start moving the L-Carriage.

〈When using the G-Carriage〉
(1)Follow the Step (1)-(3) of "When using the K-Carriage while you are knitting after having knitted one side separately".
(2)Set the row which you have found to the ▶ mark at the left side of the diagram.
(3)Move the G-Carriage to the yarn end and place it outside the Position Sensor.
(4)Push ↵ key, and the knitting screen appears.
(5)Thread the yarn in the Yarn Guide and set the Carriage Direction Lever.

WHAT TO DO IF YOU HAVE STARTED IN PATTERN KNITTING WITHOUT CHANGING TO KNITTING SCREEN.

〈When using the K-Carriage〉
(1)Place the K-Carriage outside the Position Sensor in stop screen. Take the yarn out of the Yarn Feeder. Unravel the knitting to the first row and align the needles to B position.
(2)Move the K-Carriage to the opposite side of the yarn end and place it outside the Position Sensor. Push both PART Buttons and set the Change Knob to KC(I) or KC(II).
(3)Push ↵ key, and the knitting screen appears.
(4)To select the needles move the K-Carriage across the knitting, with the Yarn Feeder empty.
(5)Thread into Feeder. Push the Cam Button according to the pattern.

〈When using the G-Carriage〉
(1)Unravel the rows which have been knitted in stop screen.
(2)Move the G-Carriage to the yarn end and place it outside the Position Sensor. Push ↵ key, and the knitting screen appears.
(3)Thread the yarn into the Yarn Guide and set the Carriage Direction Lever.

〈When using the L-Carriage〉
1.After knitting the first row of pattern, knitting one row after correcting rows or knitting one side separately...
(1)Place the L-Carriage outside the right Position Sensor in stop screen.
(2)Place the L-Carriage outside the left Position Sensor and align the needles in B position.
(3)Push the △ Up key once and then the ▽ Down key once.
(4)Push ↵ key, and the knitting screen appears.
(5)Move the L-Carriage across the knitting and continue knitting.

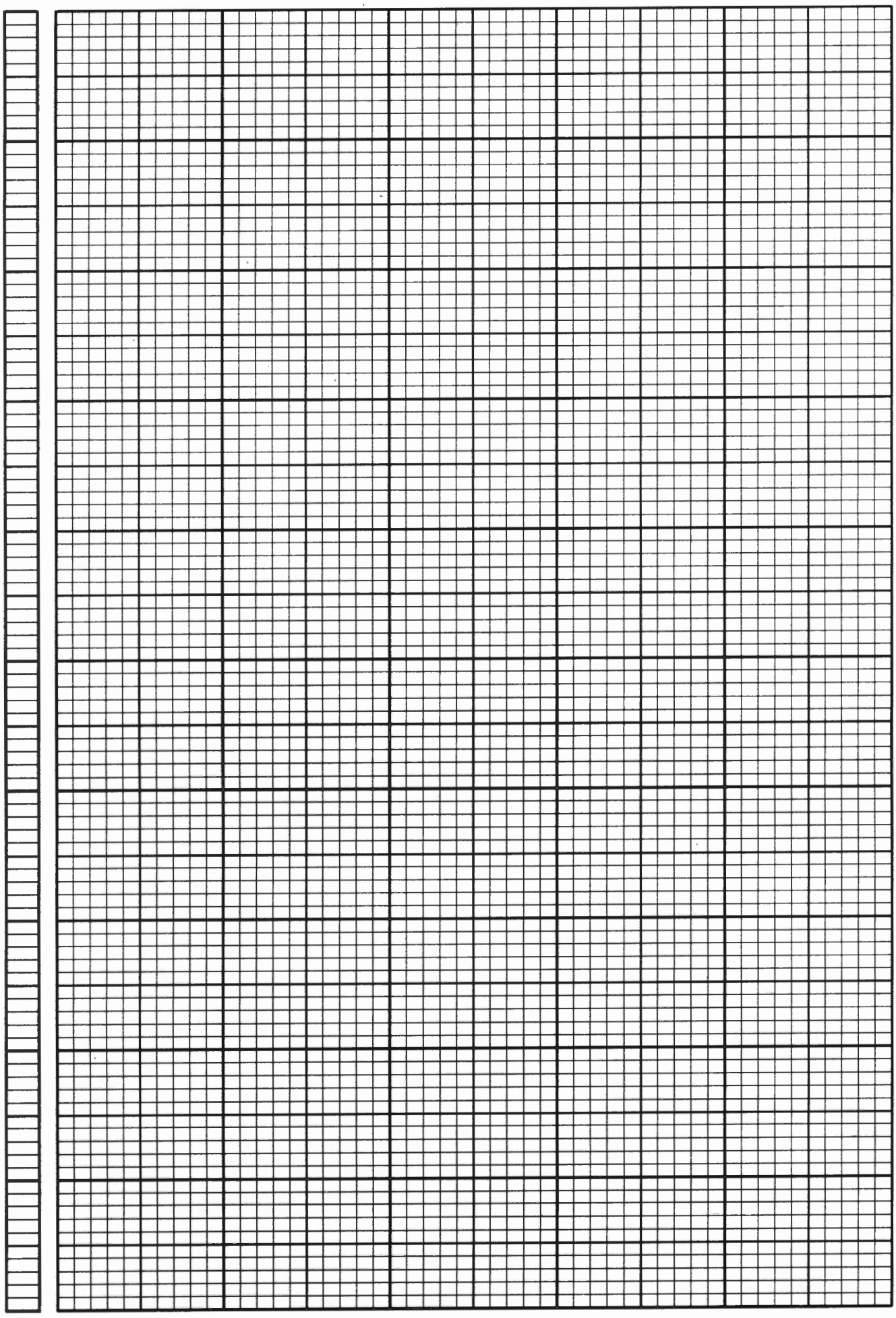
2.Others
(1)Move the L-Carriage outside the Position Sensor in stop screen.
(2)Move the L-Carriage outside the opposite Position Sensor. Align the needles in B position.
(3)Push ↵ key, and the knitting screen appears. Then, continue knitting.

WHAT TO DO IF YOU HAVE KNITTED WITHOUT KNITTING ONE SIDE SEPARATELY

〈When using the K-Carriage〉
(1)Unravel the knitting down to a row of correct pattern knitting.
(2)Select (L) or (R) in the screen of "KNIT ONE SIDE".
(3)Refer to NOTE of "IF THE SELECTED NEEDLES..." on page 73.
(4)Continue knitting according to the indication.

〈When using the L-Carriage〉
Move the L-Carriage outside the left Position Sensor. Continue knitting correctly.

〈When using the G-Carriage〉
(1)Unravel the rows required.
(2)Move the G-Carriage to the yarn end and place it outside the Position Sensor. Thread the yarn into the Yarn Guide.
(3)Continue knitting correctly.



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