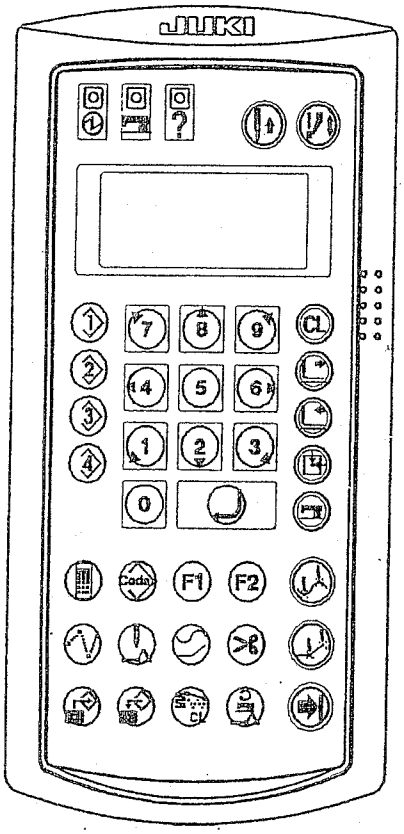
JUKI®

Handy Programming Device for Computer-Controlled Shape-Tacking Machine (LK Series)

PGM-7

INSTRUCTION MANUAL



CAUTION :
This Instruction Manual is intended for the PGM-7. Read and fully understand the instructions given under "For safe operation" in the Instruction Manual for the PGM-7 that is supplied with this Instruction Manual before putting the machine into service.

No.00
29337805

Important safety instructions for safe operation of PGM-7

	1. Be sure to turn OFF the power to the sewing machine main unit when connecting this device to or removing this device from the sewing machine main unit so as to prevent accidents caused by abrupt start of the sewing machine. 2. Check the needle entry point when performing test sewing after creating the sewing pattern. If the pattern should protrude from the feeding frame, needle interferes with the feeding frame during sewing, and the danger such as needle breakage or the like will occur.
	1. The feeding frame automatically comes down when starting the input mode, turning the test sewing key ON, or turning the feeding frame switch ON. Never place your fingers under the feeding frame so as to prevent accidents caused by abrupt start of the sewing machine.

Cautions for use of PGM-7

(1) Copying of some of the followings when creating data shall be punished by law.
Books, designs of the brand, logotypes, names, marks, popular characters, etc. cannot be used without permission of the the person who has the right.

(2) Note that we take no responsibility for the influence upon the result of use of this device.

(3) Do not give any vibration or shock to this device. In addition, do not load any heavy thing to this device.

(4) Use this device under the environment of operating temperature range of 5˚C to 35˚C and operating humidity range of 35% to 80%.

(5) The dew condensation may occur the inside or outside of this device when this device is removed from a cold place to a warm place. When the dew condensation occurs, remove this device from the sewing machine main unit and do not connect the connecting connector to the sewing machine main unit. Leave the device for approximately one hour until the dew condensation disappears and use the device after the dew condensation has disappeared.

(6) Take care not to get this device wet.

(7) Lightly wipe out the dirt of this device with a soft and dry cloth after turning OFF the power to the sewing machine main unit. When it is difficult to clean the dirt, wipe out the dirt with a soft cloth soaked in a very few amount of water or diluted detergent. At this time, take care so that moisture does not infiltrate into the inside of the device from the clearances of screws or case.

(8) The top surfaces of switch, LED, and LCD display of this device are composed from film sheets made of plastic. Do not operate this device with protruding things such as nails, screwdriver, etc. since the film is damaged.

(9) The switch of this device may be deformed if it is stored while holding pressed for a long period of time (more than 4 months). So, be careful.

(10) The contents of the display may be different from the description covered in this instruction manual for improvement of the function or the like.

(11) Use the designated Data ROM (HL011940000). If the Data ROM other than the designated one is used, the data may not be correctly stored.

CONTENTS

I . GENERAL

The PGM-7 is used with the JUKI LK series of computer-controlled, shape-tacking machine for inputting pattern data. Pattern data can be easily created with this device.

1. Feature

(1) Interactive indication method

The status and result of inputting the pattern data are indicated on the display of the PGM-7, thereby facilitating data input.

(2) The various input features reduce the time required to input data

Since it is possible to input all kinds of data including normal types of stitching such as linear stitching, spline stitching and arc stitching, as well as zigzag stitching and offset stitching, complicated pattern data can be inputted in a short period of time.

(3) Patterns can be easily modified after input using the modification function

A number of modification functions are available including "delete a point", "move a point", "add a point" and "change the point speed", which means that any pattern can be easily modified after creation.

(4) The test sewing function facilitates pattern confirmation

The input mode can be switched to the test sewing mode when the PGM-7 is used with the sewing machine. The created pattern can therefore be sewn in the test sewing mode before the data are written onto the Data ROM. Furthermore, the data can be immediately modified by referring to the result of test sewing.

(5) The memory holding function facilitates pattern copying

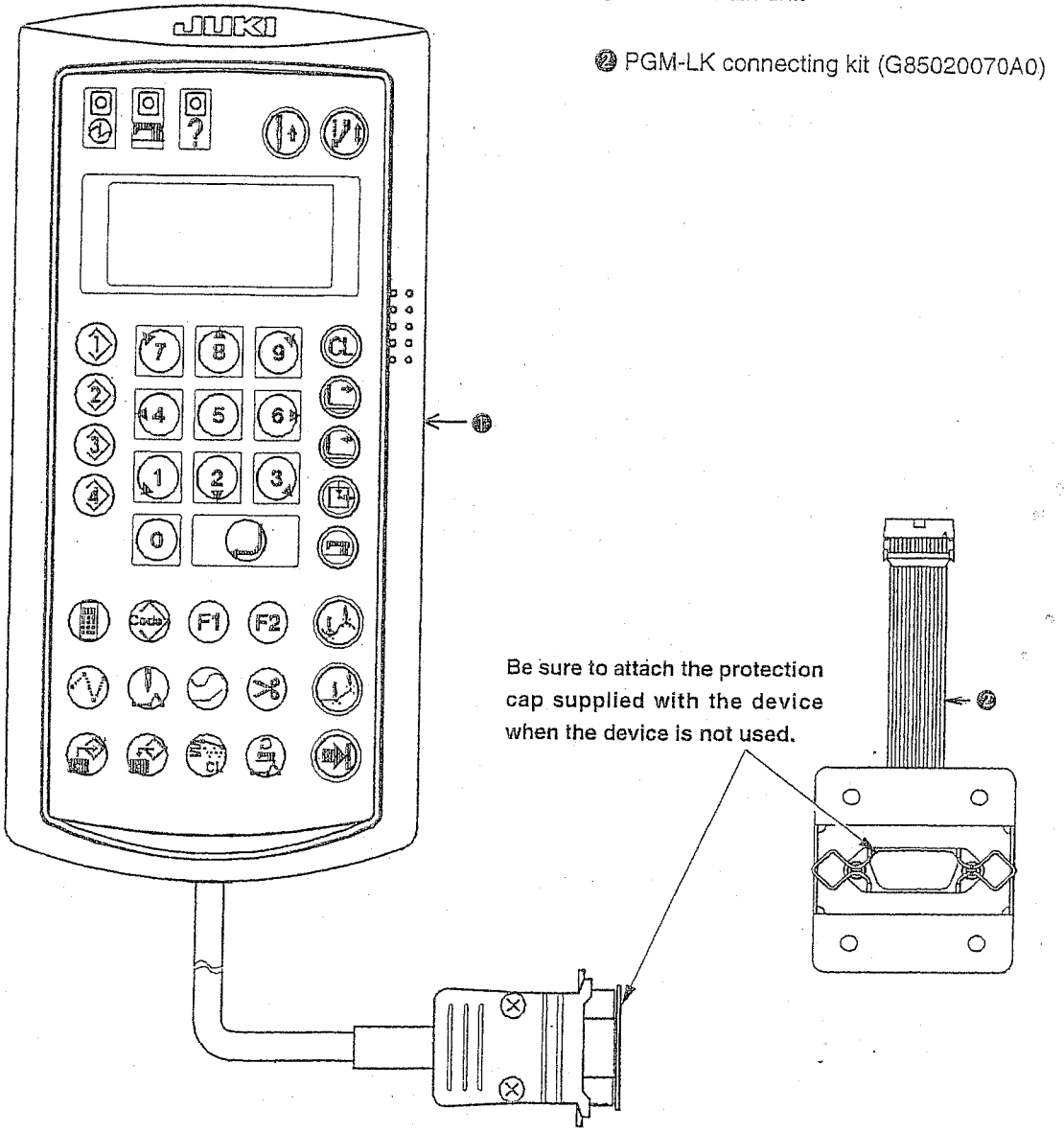
The memory of the PGM-7 can be held even when turning OFF the power. The pattern copying to the other JUKI LK machines can be easily performed. (It is necessary to purchase the PGM-LK connecting kit for the connection to the other JUKI LK machines.)

In addition, it is not necessary to perform the troublesome work of removing/installing the Data ROM since the pattern is directly written onto the Data ROM mounted on the sewing machine main unit.

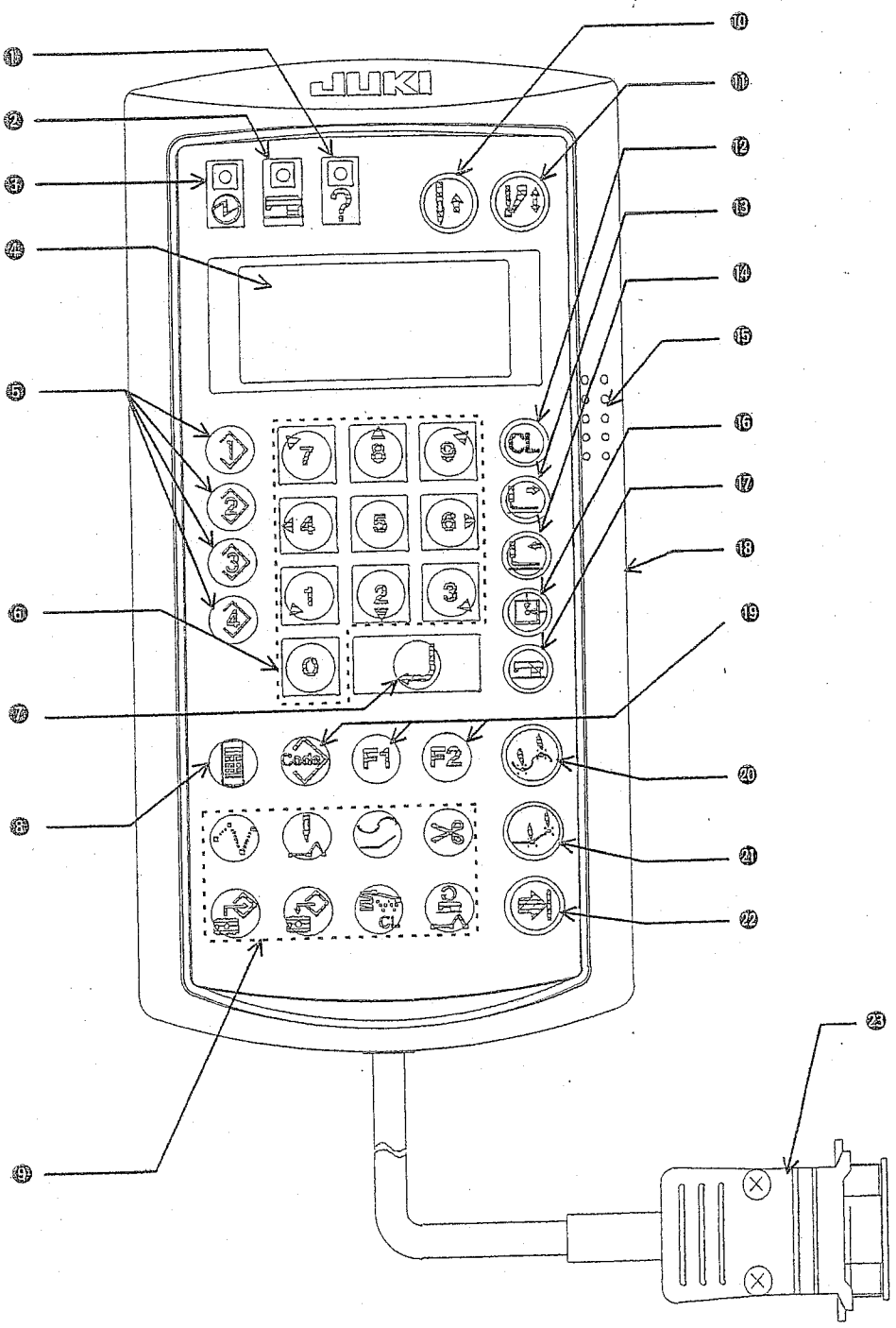
2. Configuration

❶ PGM-7 main unit

❷ PGM-LK connecting kit (G85020070A0)



3. Names of the components



⑪ Error LED :
This LED lights up when an error occurs.

⑫ Test sewing ready LED :
This LED lights up when test sewing is set ready.

⑬ Power LED :
This LED lights up when the power is normally supplied.

⑭ Indication section :
Various set values, working state, etc. are displayed.

⑤ Memory switch keys (M1, M2, M3, M4) :
These keys are used when setting memory switches.

⑥ Numeral keys :
These keys are used when inputting the various set values.
Scroll key : Diaplay can be scrolled with "2" or "8" key.
Direction key : Needle position can be moved with "1", "2", "3", "4", "6", "7", "8" or "9" key.

⑦ Enter key :
Screen is changed over to the next input item when inputting plural items in one screen.

⑧ Input selection key :
When pressing this key at the time of turning ON the power, input mode is operative.

⑨ Input exclusive function keys :
The functions can be selected, from the left of the upper section, of jump feed, point sewing, line sewing, and thread trimming, and from the left of the lower section, of pattern data read-out, pattern data writing, element deletion, and change of point speed.
When the pattern data read-out key is pressed at the time of turning ON the power, the data in the Data ROM is read in the back-up memory in the PGM-7.
When the pattern data writing key is pressed at the time of turning ON the power, the read data is written onto the Data ROM.

⑩ Needle-up key :
When this key is pressed, needle is raised.

⑪ Intermediate presser up/down key :
When this key is pressed, the intermediate presser moves up / down.

⑫ Clear key :
This key is able to cancel the input data being on the way.

⑬ Feed forward key :
When this key is pressed, the needle position will move forward one stitch along the pattern.

⑭ Feed backward key :
When this key is pressed, the needle position will move backward one stitch along the pattern.

⑮ Buzzer

⑯ Origin retrieval key :
When this key is pressed, the needle will move from a given position to its origin.

⑰ Test sewing key :
When this key is pressed, the function will be moved to the test sewing.

⑱ Contrast variable resistor :
Light or shade of the display can be adjusted.

⑲ From the left :
Code key : This key selects the function which cannot be selected by the input exclusive key.
F1, F2 key : The functions which are frequently used can be registered.
(Refer to the item "How to set the memory switch.")

⑳ Curve point key :
The point on a curve can be inputted. (The end point key is used for input of arc or circle.)

㉑ End point key :
This key can input the point on a line or the end point on a curve.

㉒ Execution / finish key :
This key is used when confirming various setting or finishing input of an element.

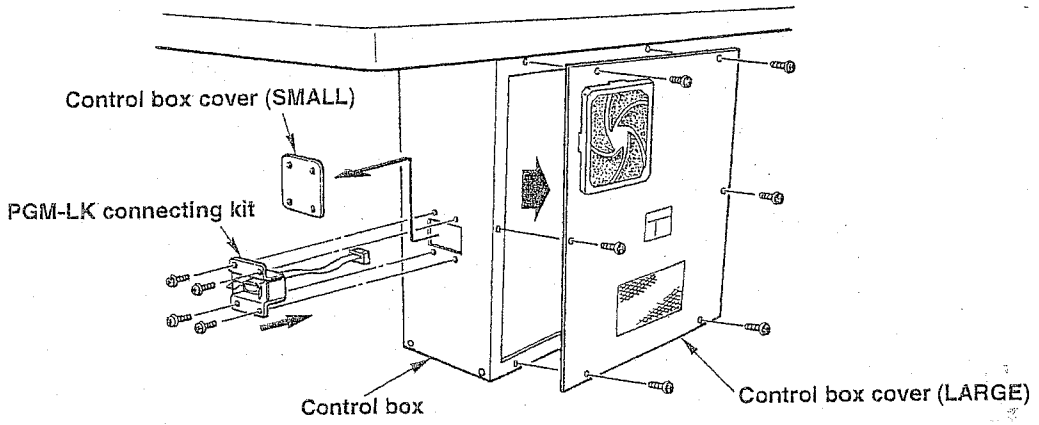
㉓ Connecting connector :
Be sure to attach the protection cap supplied with this device to this place when the PGM-7 is not used.

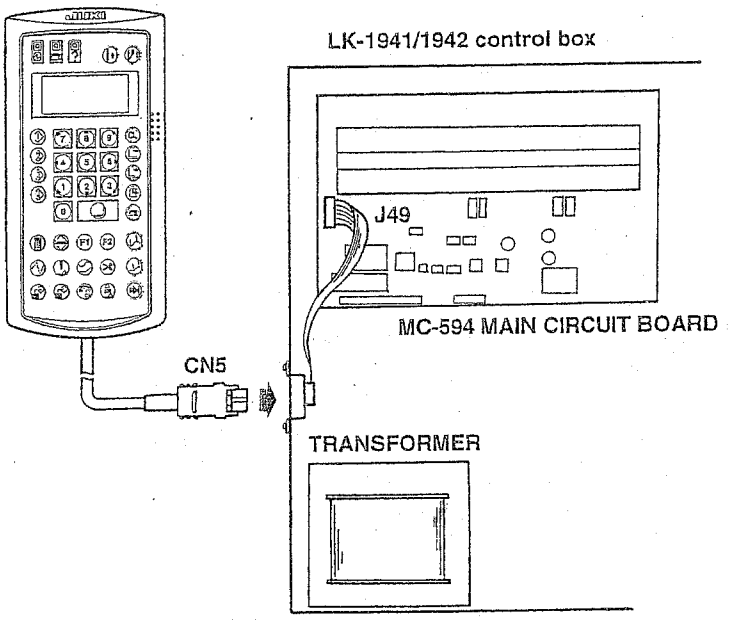
4. Connecting procedure

To use the PGM-7, connect it to one of the computer-controlled shape-tacking machines of the LK series. Use the device after connecting it to the machine main unit as follows.

WARNING :
Turn OFF the power before operating the works so as to avoid accidents caused by electrical shock hazards.

Connecting procedure for the LK-1941/1942





(1) Remove the lid (small) from the control box (MC-594) of the LK-1941/1942 series.
(2) Tighten with the screws the PGM-LK connecting kit to fix the kit.
(3) Remove the lid (large) from the control box (MC-594) of the LK-1941/1942 series.
(4) Connect connector P49 of the PGM-LK connecting kit to connector J49 on the MAIN circuit board of the control box (MC-594) of the LK-1941/1942 Series.
(5) Attach the lid (large) of the control box (MC-594) of the LK-1941/1942 series.
(6) Connect connector CN5 of the PGM-7 main unit to connector CN5 of the PGM-LK connecting kit. (Take care to keep the protection cap supplied with the device so that it is not lost.)

(Caution) PGM-7 can read the pattern data from and write the pattern data onto the Data ROM of the sewing machine main unit.
Confirm whether the Data ROM (58C256) is securely attached to the circuit board.

5. Start-up mode

For the PGM-7, start-up mode can be changed over according to the key pressing at the time of turning ON the power to the sewing machine main unit.

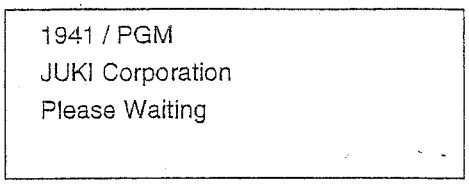
The sewing machine can be used as normal unless the key is pressed at the time of turning ON the power.

(1) Input mode

Pressing [Input selection] key, turn ON the power, and this mode can be selected.

Hold pressing [Input selection] key until "Please Waiting" is displayed. (For approximately one second)

New creation and edit of the sewing pattern, and read/write of the Data ROM can be performed.



(2) ROM reading mode

Pressing [Pattern data read-out] key, turn ON the power, and this mode can be selected.

Contents of the Data ROM mounted in the sewing machine main unit can be taken in the PGM-7. The pattern data taken in the PGM-7 can be held even when the power is turned OFF.

(3) ROM writing mode

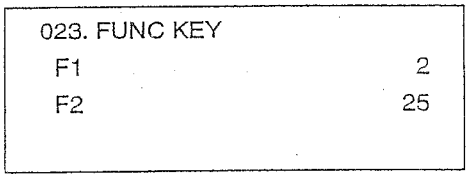
Pressing [Pattern data writing] key, turn ON the power, and this mode can be selected.

The whole or a part of the pattern data taken in the PGM-7 under the ROM reading mode can be written onto the Data ROM mounted in the sewing machine main unit.

(4) Memory switch mode

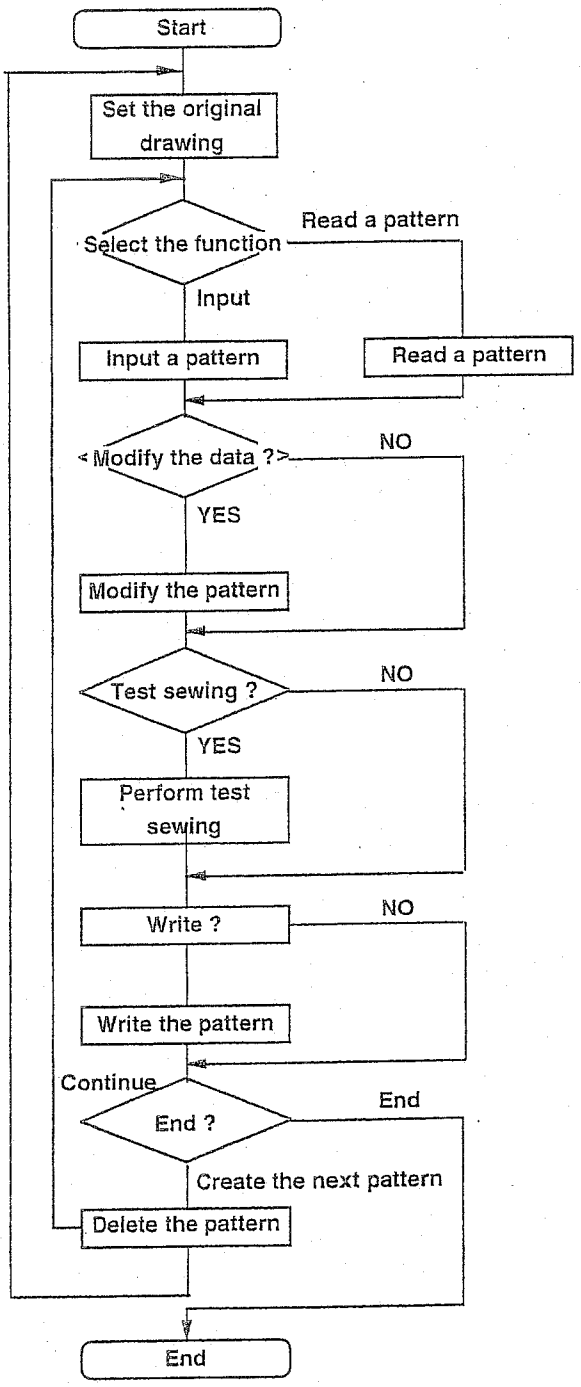
Pressing the numeral key [5], turn ON the power, and this mode can be selected.

This mode registers the function of [F1] or [F2] key.



Ⅱ. INPUT MODE

1. Operation flow chart



- Pressing [Input selection] key, turn ON the power. Hold pressing the key until "Please Waiting" is displayed on the LCD display section.
- The feeding frame goes up or comes down every time [Pedal switch] is depressed.
- If you create a pattern that needs to be inverted, set the switches concerned to allow pattern inversion before you start inputting the pattern data.
- Perform the selection of functions and execute various inputting functions.
- Perform the modification of "delete a point", "move a point", etc.
- Press [Test sewing] key.
- Test sewing is performed following the same procedure as for normal sewing.
- If you wish to modify the data after checking the results of test sewing, press [Ready] key of the sewing machine main unit to return to the input mode.
- If you are satisfied with the results of test sewing, write the pattern data onto the Data ROM of the sewing machine main unit.
- If you wish to create another pattern, be sure to first delete the current pattern.
- To return the machine to normal sewing, turn OFF the power and re-turn ON the power.

2. Operating procedure of the input mode

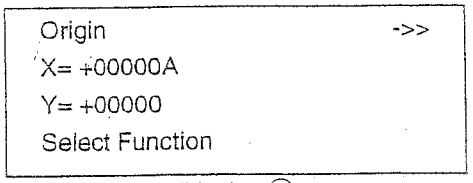
(1) Start-up of the input mode

The input mode starts up by turning ON the power while pressing [Input selection] key.

Hold pressing [Input selection] key (for approximately one second) after turning ON the power until "Please Waiting" is displayed on the LCD display section. When the communication with the sewing machine main unit is completed (for approximately 15 seconds), the feeding frame automatically comes down and moves to the mechanical origin.

(Display ①)

* To enter the input mode, the Data ROM has to be mounted in the sewing machine main unit.



Display ①

A : Shows absolute coordinate.

->> { > -- Apex / ->- End point of element / --> End point of pattern

(2) Selecting the function

Way of selecting the function is as follows :

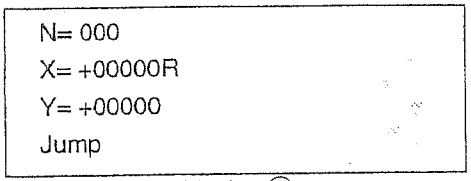
① Selection by the input exclusive function key

② Selection from the function No.
Specify by [Code] key → Numeral key, check by [Enter] key, and select by [Execution/ Finish] key.
Refer to the table on page 50 for the function No.

③ Selection from the table of functions
Selection is made in the following order :
[Code] key → [Execution / Finish] key → scroll by [8] or [2] key → select by [Execution/ Finish] key

Display ② will appear when the function is selected.

(Example : Jump)



Display ②

N : Number of points registered

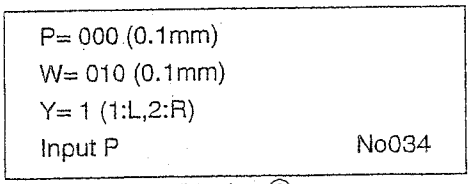
R : Shows the relative coordinate.

(3) Numeral input

In case the function specifying the numeral value of stitch length or the like is inputted, numeral input display as display ③ will appear. (Example : Offset sewing)

Specifying the numeral values of the respective items can be performed by [Enter] key. When specifying of the numeral values of the respective items is completed, press [Execution / Finish] key.

The display is changed over and input of the move of the presser can be performed.



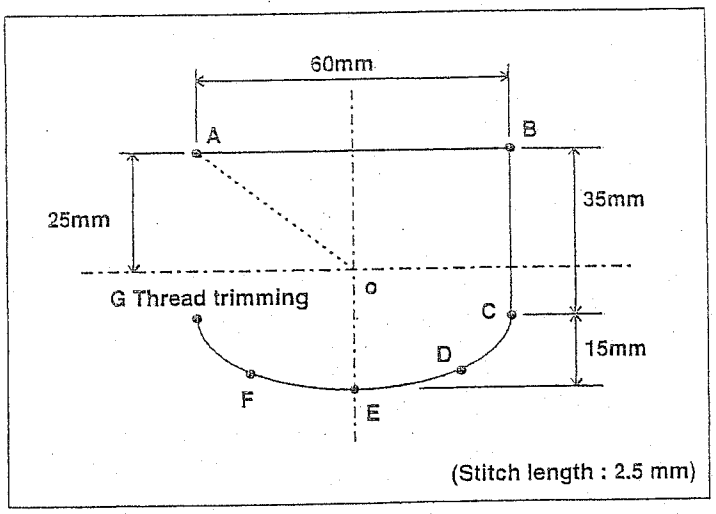
Display ③

P : Stitch length

W : Offset width

Y : Direction of offset

3. Example 1 of pattern input



The steps of (1) Pattern input, (2) test sewing and (3) writing onto the Data ROM of the pattern in the figure on the left are described below.

(1) Pattern input

① Pressing [Input selection] key, turn ON the power.
The feeding frame automatically comes down and moves to the origin.
Insert a pattern drawing written in the section paper or the like into the feeding frame since the feeding frame goes up or comes down every time the pedal switch is depressed.

Origin	->>
X= +00000A	
Y= +00000	
Select Function	

② Press [Jump] key.

N= 000
X= +00000R
Y= +00000
Jump

③ Move the feeding frame from 0 to A by the direction key.
(Amount of movement is indicated by 0.1 mm unit.)
Direction key : Numerals [1, 2, 3, 4, 6, 7, 8, and 9]

N= 000
X= –00300R
Y= +00250
Jump

④ When [Execution/ Finish] key is pressed, the feeding frame will return to the starting point 0 and trace between 0 and A.

Jump	>>>
X= –00300A	
Y= +00250	S= * *
Select Function	

⑤ Press [Line sewing] key.

P= 020 (0.1mm)	
Input P	No022

⑥ As the stitch length is 2.5 mm, input [0], [2] and [5] by the numeral keys and press [Execution/ Finish] key.

N= 000	
X= +00000R	P= 025
Y= +00000	
Sewing	

⑦ Move the feeding frame from A to B by the direction key, and press [End point] key.

* Line sewing input can input the linear and the curve. Input of a point on the line or the end point on the curve is made by pressing [End point] key and input of a point on the curve is made by pressing [Curve point] key.

N= 001	
X= +00600R	P= 025
Y= +00000	
Sewing	

⑧ Move the feeding frame from B to C by [Direction] key, and press [End point] key.

N= 002	
X= +00600R	P= 025
Y= –00350	
Sewing	

⑨ Move the feeding frame from C to D by [Direction] key, and press [Curve point] key.

N= 003	
X= +00500R	P= 025
Y= –00450	
Sewing	

⑩ Move the feeding frame from D to E by [Direction] key, and press [Curve point] key.

N= 004	
X= +00300R	P= 025
Y= –00500	
Sewing	

⑪ Move the feeding frame from E to F by [Direction] key, and press [Curve point] key.

N= 005	
X= +00200R	P= 025
Y= –00450	
Sewing	

⑫ Move the feeding frame from F to G by [Direction] key, and press [End point] key.

N= 006	
X= +00000R	P= 025
Y= –00350	
Sewing	

⑬ Press [Execution/ Finish] key and the line sewing is finished.

Press [Execution/ Finish] key, and the feeding frame returns to the point A and traces between A, B, C, D, E, F and G.

Spline	
X=–00300A	P= 025
Y=–00100	S= * *
Select Function	

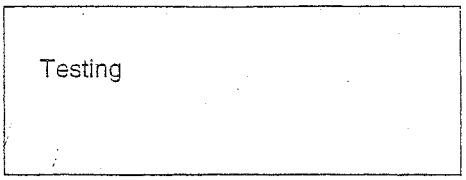
⑭ Press [Thread trimming] key.

Thread Trimmer	
X= –00300A	P= 025
Y= –00100	S= * *
Select Function	

Input procedure ends as above. Do not turn OFF the power since the pattern has not been saved yet. The shape of input can be checked by [Feed forward] or [Feed backward] key. Check that needle, intermediate presser and feeding frame do not interfere with one another, and perform the test sewing.

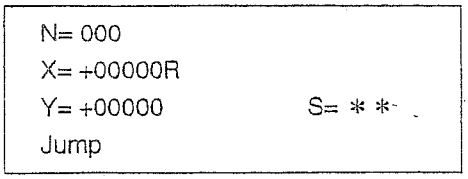
(2) Test sewing

① Press [Test] key.
The feeding frame moves to point A and goes up.



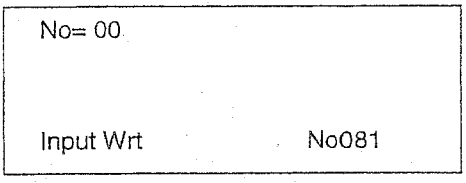
② Normal sewing can be performed.

③ When the test sewing is completed, press [Ready] key of the sewing machine main unit.
The feeding frame automatically comes down and moves to the origin.

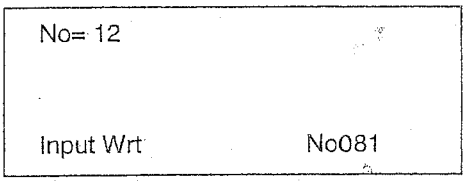


(3) Writing to the Data ROM

① Press [Pattern data writing] key.



② Specify the pattern No. desired with the numeral key.
Pattern No. can be specified from among 1 to 99.
Here, the pattern No. desired is regarded as No. 12, and press [1] and [2] of the numeral keys.

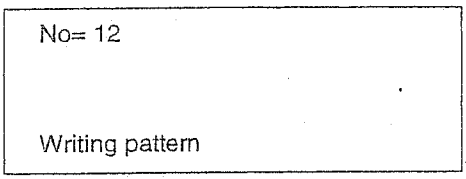


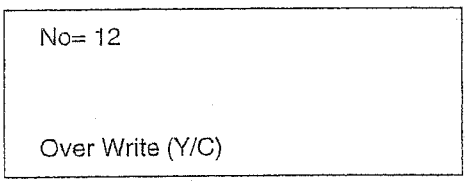
③ By pressing [Execution/ Finish] key, writing onto the Data ROM starts. If the pattern No. specified is already used, the screen is changed over. Indicate whether overwriting of the pattern No. should be performed.

[Execution/ Finish] key → Overwriting
(deletion of the previous data)

[Clear] key → Cancellation

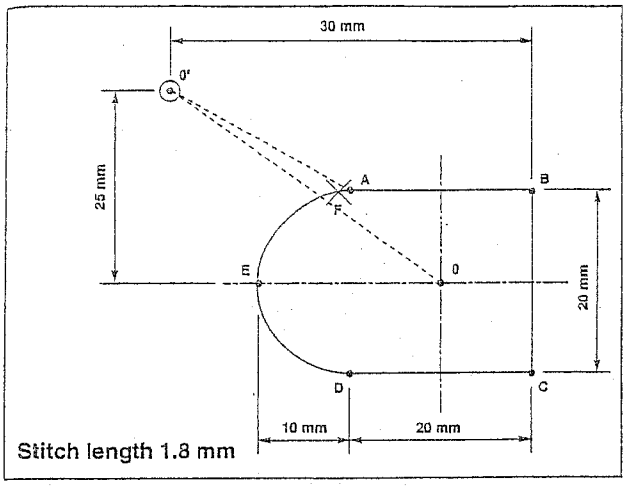
If the [Clear] key is selected, the screen returns to the step ②, and another pattern No. can be indicated.





④ After the writing is finished, the display will be back to the previous state.

4. Example 2 of pattern input (2nd origin)



Stitch length 1.8 mm

When the needle point is at the sewing start, it may interfere with setting the material. In this case, input the second origin as shown in the figure.

① Pressing [Input selection] key, turn ON the power switch. The feeding frame automatically comes down and moves to the origin.
Insert a pattern drawing written in the section paper or the like into the feeding frame since the feeding frame goes up or comes down every time the pedal switch is depressed.

```
Origin                    ->>
X = +  00000A
Y = +  00000
Select Function
```

② Press the [Jump] key.

```
N = 000
X = +  00000R
Y = +  00000
Jump
```

③ Move the feeding frame to 0' by the direction key.

```
N = 000
X = – 00300R
Y = + 00250
Jump
```

④ Press the [Execution / Finish] key.

```
Jump                      >>>
X = – 00300A
Y = + 00250          S = * *
Select Function
```

⑤ Press the [F1] key.

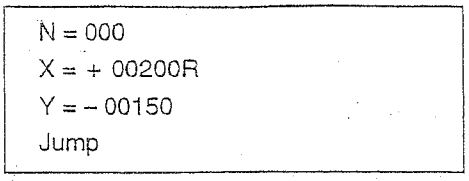
(Note) In the [F1] key "Second origin" is input as the initial condition.

```
Sec - Origin
X = – 00300A
Y = + 00250
Select Function
```

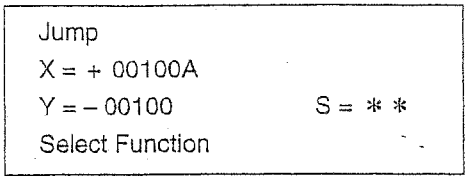
⑥ Press the [Jump] key.

```
N = 000
X = + 00000R
Y = + 00000
Jump
```

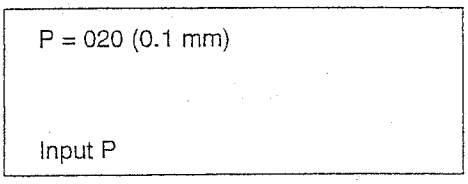
⑦ Move the feeding frame from 0' to A by the direction key.



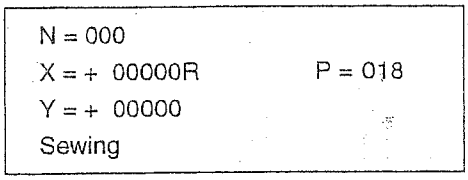
⑧ Press the [Execution / Finish] key.



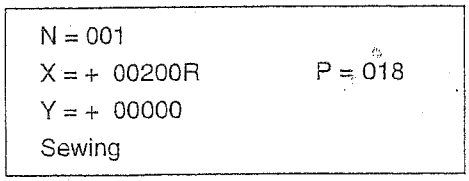
⑨ Press the [Line] key.



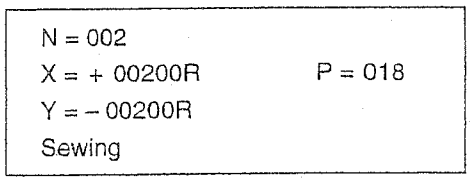
⑩ As the stitch length is set 1.8 mm, input [0][1][8] by the numeral key, and press the [Execution / Finish] key.



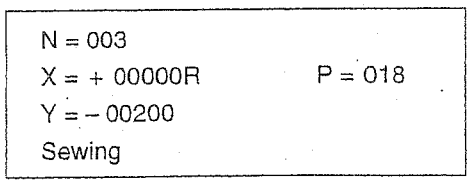
⑪ Move the feeding frame from A to B by the direction key, and press the [End point] key.



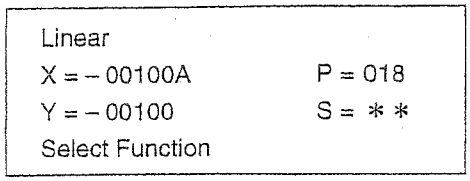
⑫ Move the feeding frame from B to C by the direction key, and press the [End point] key.



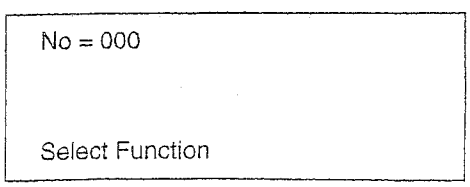
⑬ Move the feeding frame from C to D by the direction key, and press the [End point] key.



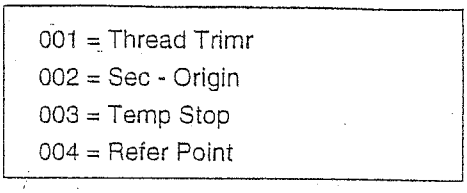
⑭ Press the [Execution / Finish] key.



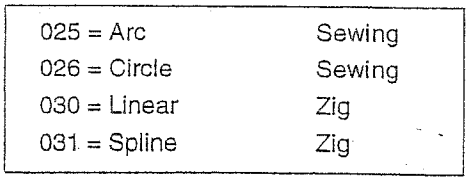
⑮ For D~E~F arc input is made. In this case, however, selection of function is made from the indication of the table of functions of the memory switch.
Press the [Code] key.



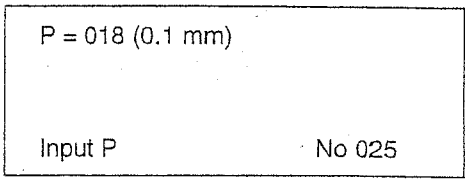
⑯ Press the [Enter] key or the [Execution / Finish] key.



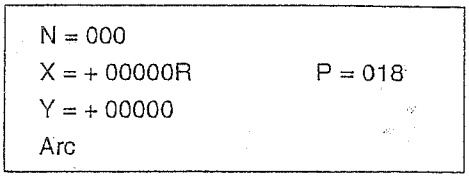
⑰ Select the arc input by [Scroll] key.



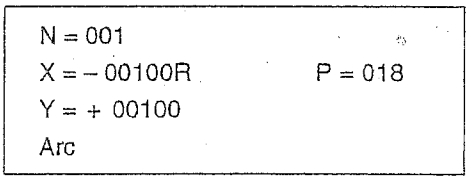
⑱ Press the [Execution / Finish] key.



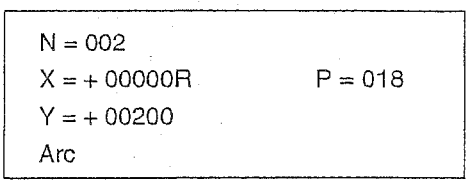
⑲ As the stitch length is set 1.8 mm as before, press the [Execution / Finish] key.



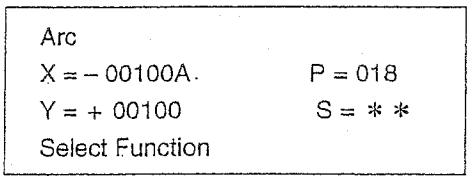
⑳ Move the feeding frame from D to E by the direction key, and press the [End point] key.



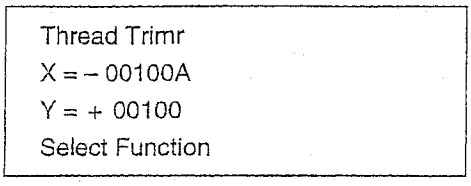
㉑ Move the feeding frame from E to F by the direction key, and press the [End point] key.



㉒ Press the [Execution / Finish] key.

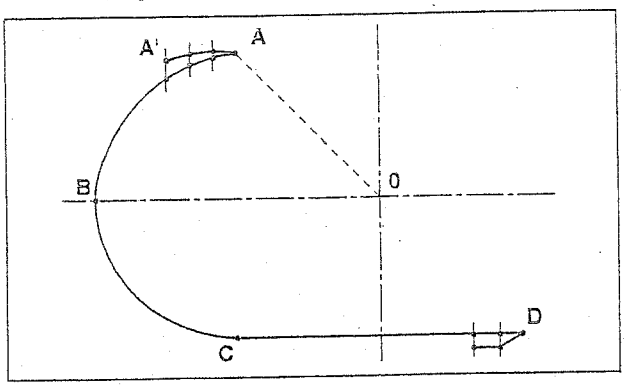


㉓ Press the [Thread trimming] key.



The input procedures now have been completed.
The shape of input cab be confirmed by [Feed forward] or [Feed backward] key.

5. Example 3 of pattern input (Automatic back-tack)



At first, input the arc ABC and the line CD. Then, input 3 stitches at the sewing start and 2 stitches at the sewing end.

① Pressing [Input selection] key, turn ON the power switch. The feeding frame automatically comes down and moves to the origin.
Insert a pattern drawing written in the section paper or the like into the feeding frame since the feeding frame goes up or comes down every time the pedal switch is depressed.

```
Origin                    ->>
X = + 00000A
Y = + 00000
Select Function
```

② Press the [Jump] key.

```
N = 000
X = + 00000R
Y = + 00000
Jump
```

③ Move the feeding frame from 0 to A by the moving key.

```
N = 000
X = – 00200R
Y = + 00200
Jump
```

④ Press the [Execution / Finish] key.

```
Jump                      >>>
X = – 00200A
Y = + 00200          S = * *
Select Function
```

⑤ Press the [F2] key.
(The arc sewing is set in the [F2] key at the time of delivery.)

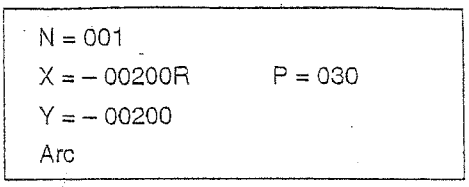
```
P = 020 (0.1 mm)


Input P              No 025
```

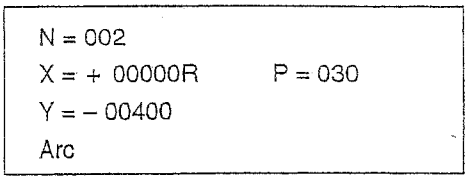
⑥ Input [0][3][0] in order by the ten key, and press the [Execution / Finish] key.

```
N = 000
X = + 00000R         P = 030
Y = + 00000
Arc
```

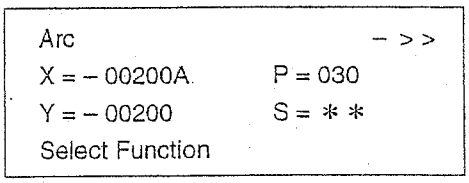
⑦ Move the feeding frame from A to B by the moving key, and indicate by the [End point] key.
(Use the [End point] key for indicating the position when the circle or the arc is input.)



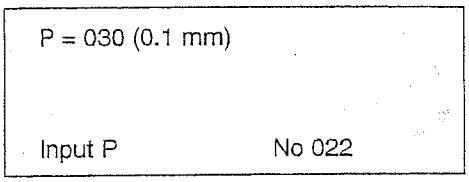
⑧ Move the feeding frame from B to C by the moving key, and indicate by the [End point] key.



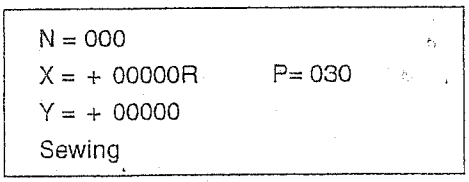
⑨ Press the [Execution / Finish] key.



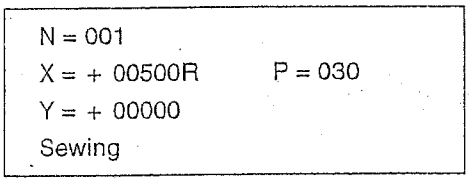
⑩ Press the [Line] key.



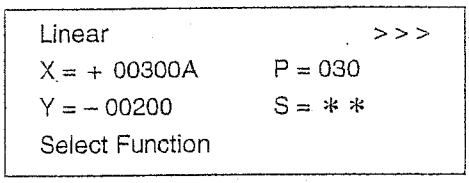
⑪ Press the [Execution / Finish] key as the sewing pitch has not to be changed from 3 mm.



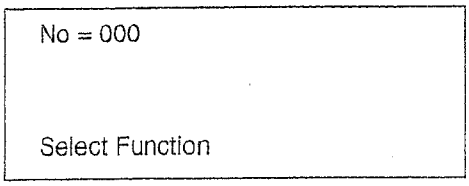
⑫ Move the feeding frame from C to D by the moving key, and input by the [End point] key.



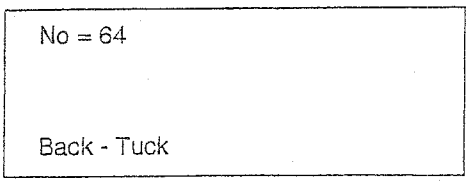
⑬ Press the [Execution / Finish] key.



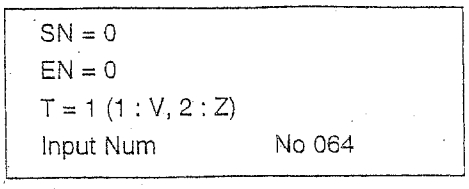
⑭ Press the [Code] key.



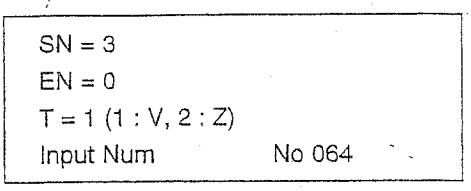
⑮ Press [0][6][4] in order by the numeral key, and press [Enter] key.
No = 064 of the back tack is shown.



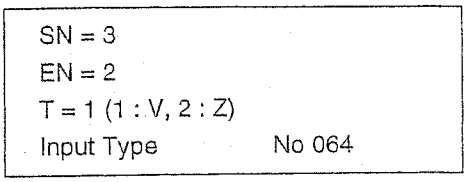
⑯ Press the [Executin / Finish] key.



⑰ Press [3] by the numeral key, and press [Enter] key.
Input 3 stitches, the number of back tack stitches at the sewing start.

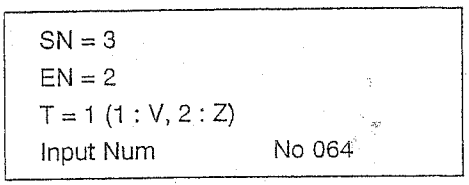


⑰ Press 2 by the numeral key, and press [Enter] key.
Input 2 stitches, the number of back tack stitches at the sewing end.

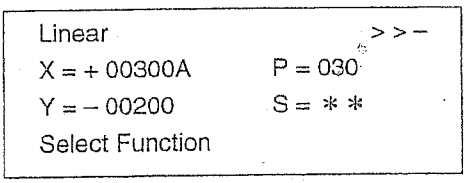


⑲ Indicate the type of back tack.
Take the V type for example, press [1], and press [Enter] key.

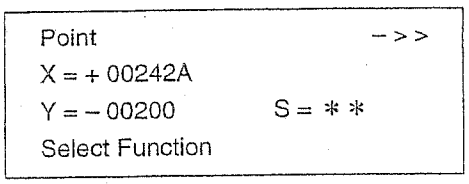
1 : V type
2 : Z type



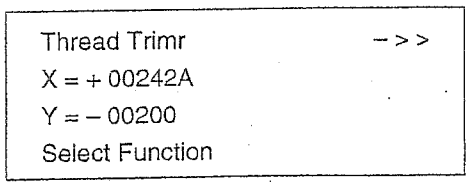
⑳ Press the [Execution /Finish] key.



㉑ Advance to the final point by the [Forward] key.

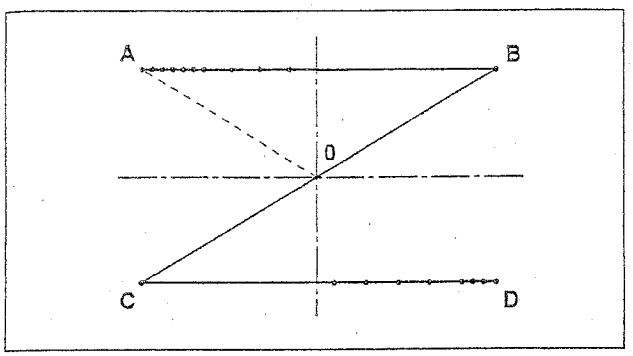


㉒ Press the [Thread trimmer] key.



㉓ It is confirmed that the back tack is made by means of [Feed forward] or [Feed backward] key.
The jump feed from O to A is automatically changed to O to A'.

6. Example 4 of pattern input (Condensation stitching)



At the start, make the linear sewing, A–B–C–D, and sewing pitch of 2.5 mm. And, the condensation stitching which makes the sewing pitch finer, is to be performed at the start and end of sewing.
Specify the numbers of the respective stitches at the start and end of sewing and the pitch of condensation stitching.

① Pressing [Input selection] key, turn ON the power switch. The feeding frame automatically comes down and moves to the origin.
Insert a pattern drawing written in the section paper or the like into the feeding frame since the feeding frame goes up or comes down every time the pedal switch is depressed.

```
Origin                    - > >
X = + 00000A
Y = + 00000
Select Function
```

② Press the [Jump] key.

```
N = 000
X = + 00000R
Y = + 00000
Jump
```

③ Move the feeding frame from 0 to A by the moving key.

```
N = 000
X = – 00250R
Y = + 00150
Jump
```

④ Press the [Execution / Finish] key.

```
Jump                      > > >
X = + 00250A
Y = + 00150          S = * *
Select Function
```

⑤ Press the [Line] key.

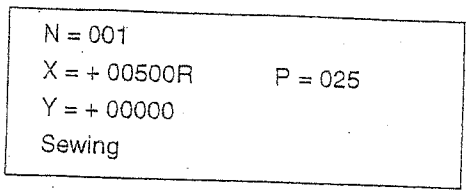
```
P = 020 (0.1 mm)


Input P              No 022
```

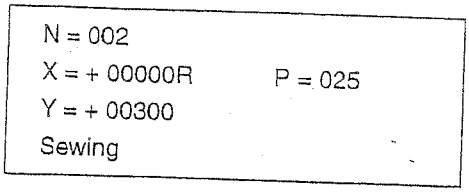
⑥ Press the numeral key in the order of [0][2][5], and press the [Execution / Finish] key.
(Stitch length 2.5 mm)

```
N = 000
X = + 00000R         P = 025
Y = + 00000
Sewing
```

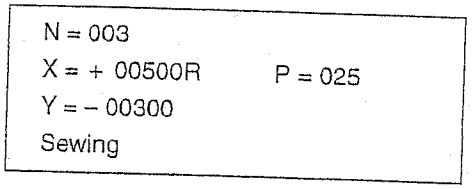
⑦ Move the feeding frame from A to B by the moving key, and press the [End point] key.



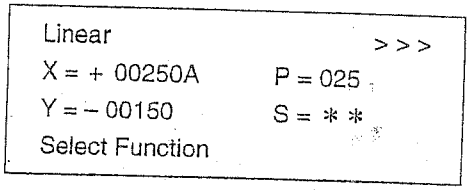
⑧ Move the feeding frame from B to C by the moving key, and press the [End point] key.



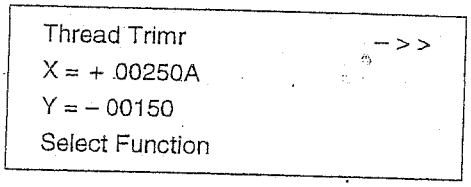
⑨ Move the feeding frame from C to D by the moving key, and press the [End point] key.



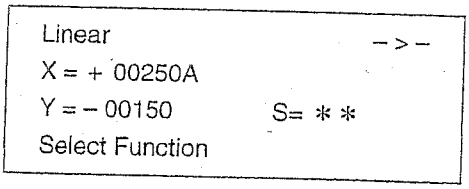
⑩ Press the [Execution / Finish] key.



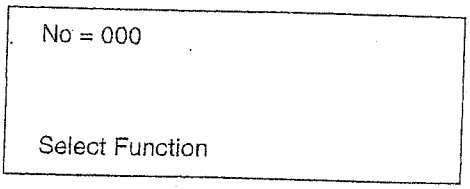
⑪ Press the [Thread trimming] key.



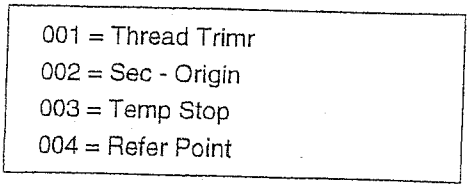
⑫ Return to the sewing part by the [Backward] key. Condensation stitching has to be specified over the sewing part.



⑬ Press the [Code] key.



⑭ Press the [Enter] key to make the table shown.



⑮ Make the indication of the condensation stitching, No. 065, by operating the [Scroll] key.

```
065 = Condensation
066 = Over Stitch
070 = Pt Del          R
071 = Pt Move         R
```

⑯ Press the [Execution / Finish] key.

```
SN = 0
EN = 0
P = 020 (0.1 mm)
Input Num          No 065
```

⑰ Press [2] of the numeral key, and input it by the [Enter] key.
In this stage, the 2 stitches at the sewing start is changed to the condensation stitching.

```
SN = 2
EN = 0
P = 020 (0.1 mm)
Input Num          No 065
```

⑱ Press [1] of the numeral key, and input it by the [Enter] key.
In this stage, the 1 stitch at the sewing end is changed to the condensation stitching.

```
SN = 2
EN = 1
P = 020 (0.1 mm)
Input P  No 065
```

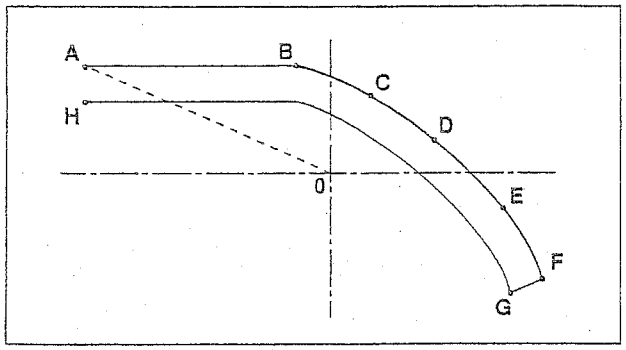
⑲ Press [0][0][8] of the numeral key, and input by the [Enter] key. The sewing pitch of the condensation stitching is set 0.8 mm.

```
SN = 2
EN = 1
P = 008 (0.1 mm)
Input P            No 065
```

⑳ Press the [Execution / Finish] key.
㉑ The confirmation of the shape can be made by [Feed forward] or [Feed backward] key.

```
Point                    ->-
X = + 00250A
Y = - 00150        S = * *
Select Function
```

7. Example 5 of pattern input (Double-stitching)



When inputting A–B–C–D–E–F using the function of the double-stitch sewing, double-stitch sewing of A–B–C–D–E–F–G–H can be made.

① Pressing [Input selection] key, turn ON the power switch. The feeding frame automatically comes down and moves to the origin.
Insert a pattern drawing written in the section paper or the like into the feeding frame since the feeding frame goes up or comes down every time the pedal switch is depressed.

```
Origin                    - > >
X = + 00000A
Y = + 00000
Select Function
```

② Press the [Jump feed] key.

```
N = 000
X = + 00000R
Y = + 00000
Jump
```

③ Press the [Moving] key, and move the feeding frame from 0 to A.

```
N = 000
X = - 00350R
Y = + 00150
Jump
```

④ Press the [Execution / Finish] key.

```
Jump                      > > >
X = - 00350A
Y = + 00150          S = * *
Select Function
```

⑤ Press the [Code] key.

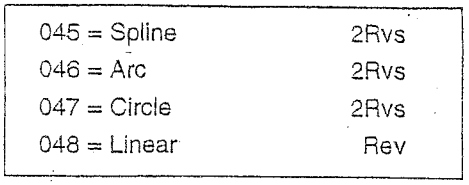
```
No = 000


Select Function
```

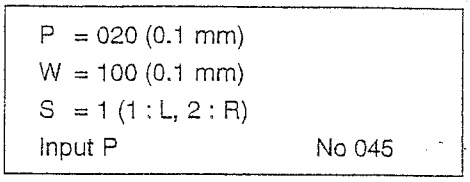
⑥ Press the [Enter] key.

```
001 = Thread Trimr
002 = Sec - Origin
003 = Temp Stop
004 = Refer Point
```

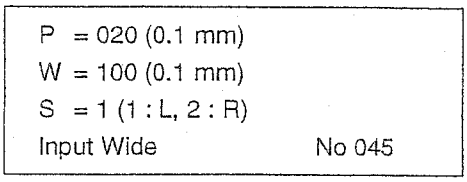
⑦ Press the [Scroll] key, and select "Spline 2 Rvs".



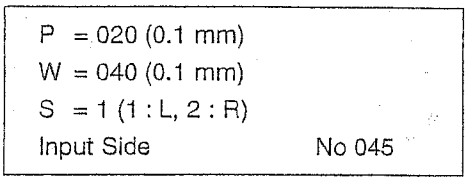
⑧ Press the [Execution / Finish] key.



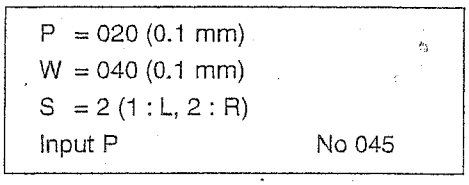
⑨ As the pitch is set 2 mm, press [Enter] key.



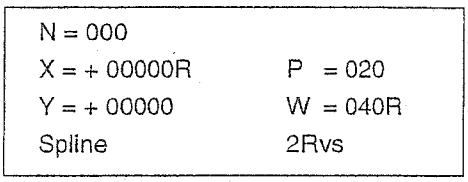
⑩ As the width is set 4 mm, indicate [0][4][0] by the ten key, and press the [Enter] key.



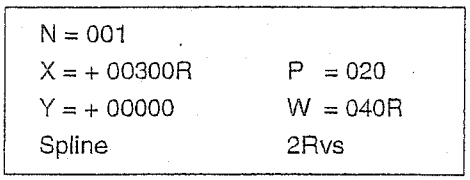
⑪ The sewing line is made on the right side of the advancing direction of the input line. So, indicate the right side. Press [2] of the ten key, and press the [Enter] key.



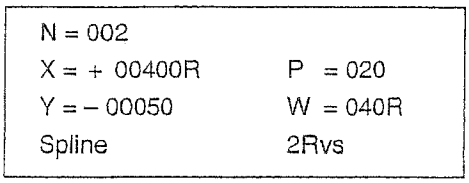
⑫ Press the [Execution / Finish] key.



⑬ Move the feeding frame from A to B by the moving key, and press the [End point] key.



⑭ Move the feeding frame from B to C by the moving key, and press the [Curve point] key.



⑮ Move the feeding frame from C to D by the moving key, and press the [Curve point] key.

N = 003	
X = + 00500R	P = 020
Y = – 00100	W = 040R
Spline	2Rvs

⑯ Move the feeding frame from D to E by the moving key, and press the [Curve point] key.

N = 004	
X = + 00600R	P = 020
Y = – 00200	W = 040R
Spline	2Rvs

⑰ Move the feeding frame from E to F by the moving key, and press the [End point] key.

N = 005	
X = + 00650R	P = 020
Y = – 00300	W = 040R
Spline	2Rvs

⑱ Press the [Execution / Finish] key.

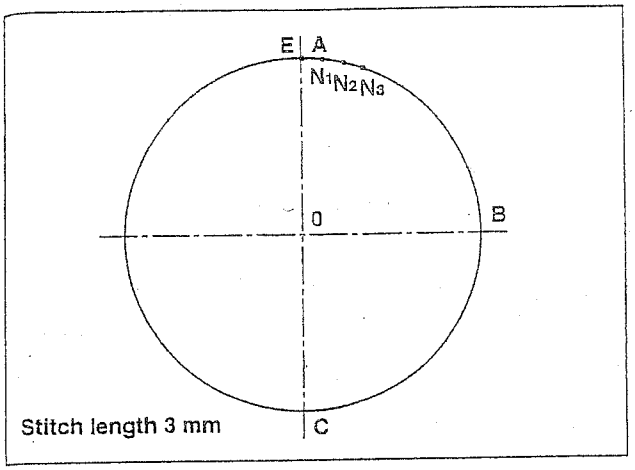
Spline	– > >
X = – 00350A	P = 020
Y = + 00110	S = * *
Select Function	

⑲ Press the [Thread trimming] key.

Tread Trimr	– > >
X = – 00350A	
Y = + 00110	
Select Function	

⑳ The input procedures now have been completed.
Confirm the shape by [Feed forward] or [Feed backward] key.

8. Example 6 of pattern input (Overlapping stitching)



After the circle, ABCE, is made, from the end point of the circle, E, the stitches are made so as to overlap N_1, N_2 and N_3.

① Pressing [Input selection] key, turn ON the power switch. The feeding frame automatically comes down and moves to the origin.
Insert a pattern drawing written in the section paper or the like into the feeding frame since the feeding frame goes up or comes down every time the pedal switch is depressed.

```
Origin                    ->>
X = + 00000A
Y = + 00000
Select Function
```

② Press the [Jump] key.

```
N = 000
X = + 00000R
Y = + 00000
Jump
```

③ Move the feeding frame from 0 to A by the moving key.

```
N = 000
X = + 00000R
Y = + 00250
Jump
```

④ Press the [Execution / Finish] key.

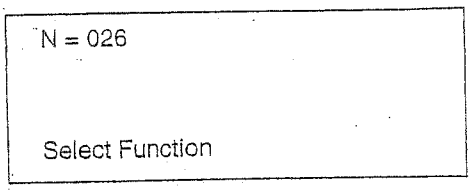
```
Jump                      >>>
X = + 00000A
Y = + 00250          S = * *
Select Function
```

⑤ Press the [Code] key.

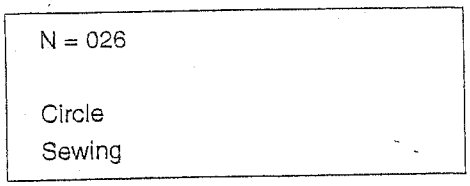
```
N = 000


Select Function
```

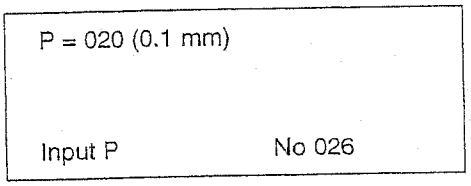
⑥ Press the numeral key in the order of [0][2][6].
The code of the circle sewing is 026.



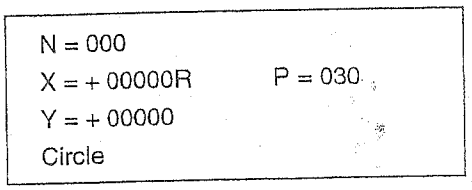
⑦ Press the [Enter] key.
(You can omit this operation.)



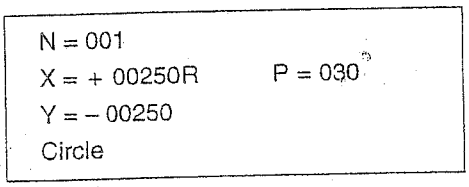
⑧ Press the [Execution / Finish] key.



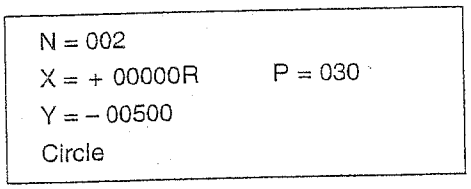
⑨ Input 3 mm ([0][3][0]) by the ten key, and press the [Execution / Finish] key.



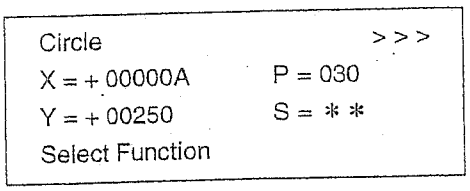
⑩ Move the feeding frame from A to B by the moving key, and input by the [End point] key.
(Use the [End point] key for inputting the circle and arc.)



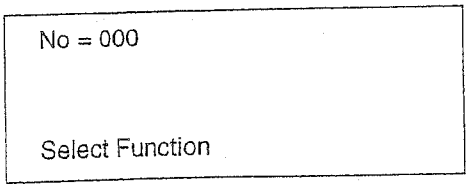
⑪ Move the feeding frame from B to C by the moving key, and input by the [End point] key.



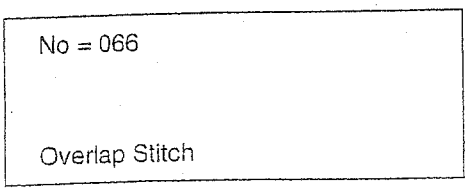
⑫ Press the [Execution / Finish] key.
The feeding frame once returns in a straight line in the order of C → B → A and moves to the E point tracing the arc of A → B → C → E.



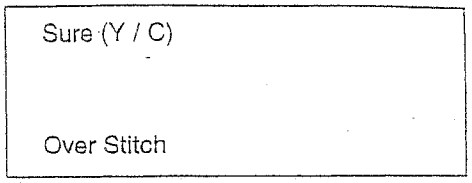
⑱ Press the [Code] key.



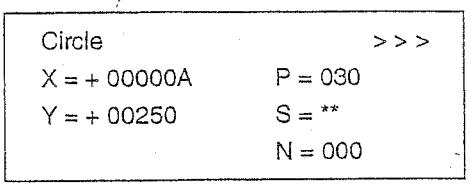
⑭ Press the numeral key in the order of [0][6][6], and press the [Enter] key.



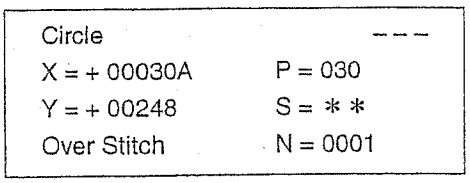
⑮ Press the [Execution / Finish] key.



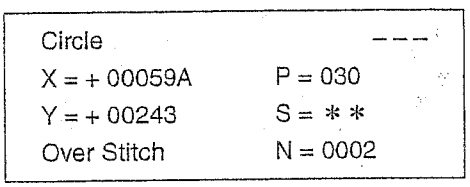
⑯ Press the [Execution / Finish] key.



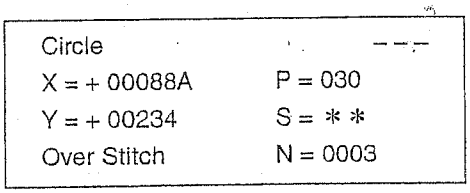
⑰ Move the feeding frame to the position N_1 by the [Feed forward] or [Feed backward] key, and indicate by the [End point] key.
(Indication of the position for the overlapping stitching is performed by the [Forward] or [Backward] key. The moving key is not effective.)



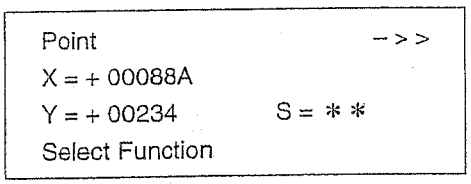
⑱ Move the feeding frame to the position N_2 by moving one stitch using the [Feed forward] key, and indicate by the [End point] key.



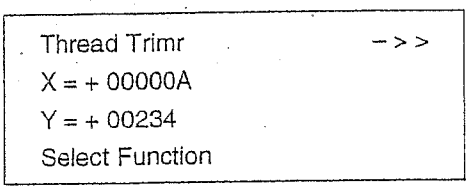
⑲ Move the feeding frame to the position N_3 by moving one stitch using the [Feed forward] key, and indicate by the [End point] key.



⑳ Press the [Execution / Finish] key.



㉑ Press the [Thread trimming] key.



㉒ The procedures have been completed. Confirm the shape by [Feed forward] or [Feed backward] key.

9. List of the input function

The input functions are described in the order of the function Nos.

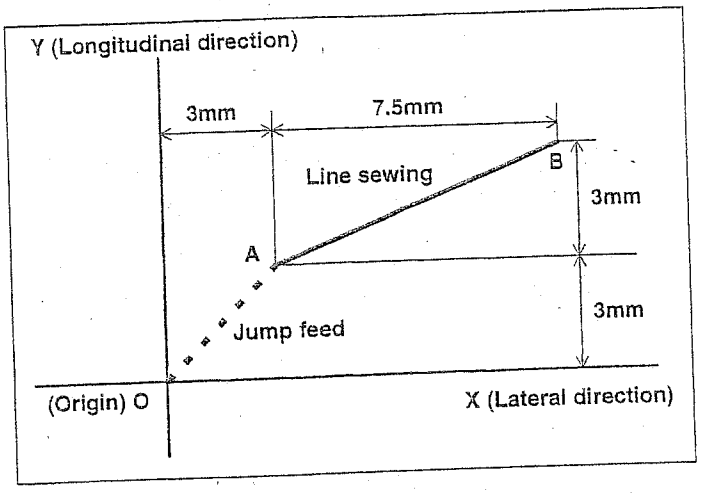
Relative coordinates and absolute coordinates

Expression of the relative coordinates and the absolute coordinates is used in this list of input function.

If you desire to set point B in the pattern as shown in the figure on the right, in case of the relative coordinates, the point B is located as follows :

From point A (previous point) to
X (lateral direction) : 7.5 mm

From point A (previous point) to
Y (longitudinal direction) : 3mm



The display sets the point as follows :

X = +0075R
Y = +0030

After all, the relative coordinates show the moving amount from the previous point.

Next, in case of the absolute coordinates, the point B is located as follows :

From origin O to X (lateral direction) : 10.5 mm
From origin O to Y (longitudinal direction) : 6 mm

The display sets the point as follows :

X = +0105A
Y = +0060

After all, the absolute coordinates show the moving amount from the origin O.

Element

Element is the minimum unit which composes the pattern data.

Normally, an element is created by the operation through selection of function, input of coordinates, and pressing [Execution/finish] key to finish the work.

Sewing machine control command such as thread trimming or the like is one of the elements as well.

The created element may be divided into two elements or more by means of the modification function of the point deletion or the like.

Function No. 001 Thread trimming

Function

This function sets thread trimming.

Operating procedure

Press [Thread trimming] key.

Explanation

This function sets the thread trimmer at the current needle position.

Thread trimming makes use of the rotation of the main shaft, and the thread trimmer does not operate even if the thread trimming is set on the sewing line.

Function No. 002 2nd origin

Function

This function sets the second origin.

Operating procedure

Press [F1] key. (State at the time of delivery)

When [F1] key is assigned to the other function by the memory switch, select function No. 2 from [Code] key. (See "Operating procedure of the input mode.)

Explanation

When it is difficult to set the sewing product at the sewing start point, setting the second origin facilitates setting of the sewing product.

The second origin can be set on the way of jump feed moving from the origin to the sewing start point.

Function No. 003 Temporary stop

Function

This function sets the temporary stop.

Operating procedure

Select the function No. 003 from [Code] key.

Explanation

This function sets the temporary stop at the current needle position.

This function can stop the sewing machine during sewing when the sewing machine comes to the temporary stop setting position.

At this time, the feeding frame goes up. The sewing machine can operate again by lowering the feeding frame by means of the pedal switch.

Function No. 005 Inverting point

Function

This function sets the inverting point.

Operating procedure

Select the function No. 005 from [Code] key.

Explanation

This function sets the inverting point at the current needle position. It is possible to set at the position you desire.

This function can invert the position of the inverting crank during sewing when the sewing machine comes to the inverting point setting position.

It is necessary to set the function No. 091 (Inverting setting) to the optional inverting.

Fully check whether needle and the crank do not interfere with each other using [Feed forward] and [Feed backward] keys after creating the pattern.

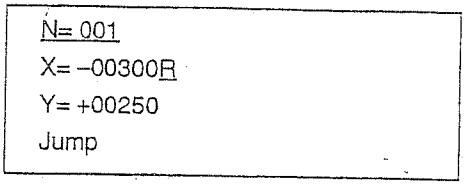
Function No. 020 Jump feed

Function

This function sets the jump feed.

Operating procedure

(1) Press [Jump] key.
(2) Move the needle position to the specified position with the direction key.
(3) Press [End point] key. (See the display in the screen.)
(4) Further, when specifying the next point, the step returns to (2).
(5) Press [Execution/ Finish] key.



Explanation

This function can move the feeding frame without rotating the sewing machine.
This function is used when moving from the origin to the sewing start point or the distance between one sewing and the other sewing is far.
In addition, this function can be used when specifying the moving route from the sewing end point to the sewing start point.
Number of points set by [End point] key is displayed as N = * * *. Number of input points is available up to 128.
Display of coordinates at the LCD display section is "R" (display of relative coordinates from the point where jump input started) at the initial setting. However, the display of the coordinates can be changed to A (display of absolute coordinates) by changing the setting of the function No. 111.

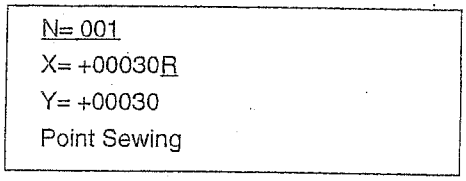
Function No. 021 Point sewing

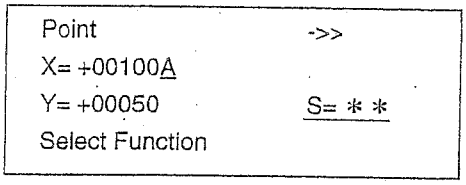
Function

This function inputs the point sewing.

Operating procedure

(1) Press [Point sewing] key.
(2) Move the needle position to the specified position with the direction key.
(3) Press [End point] key. (See the upper right display of the screen.)
(4) Further, when specifying the next point, the step returns to (2).
(5) Press [Execution/ Finish] key. (See the lower right display in the screen.)





Explanation

This function is used when creating the sewing data stitch by stitch.
Stitch length is specified in accordance with the sewing machine used.
It is not possible to specify the stitch length more than the specified one.
Number of points set by [End point] key is displayed as N = * * *. Number of input points is available up to 128.
"S" displays the sewing speed. "* *" automatically displays the maximum value specified by the sewing machine, and the other becomes SX100 (Stitch/sec.).
The value of "S" can be changed by the function No. 092.

Function No. 022 Line sewing

Function

This function inputs the sewing data of linear and curve.

Operating procedure

(1) Press [Line sewing] key.
(2) Specify the stitch length with the numeral key. (See the upper right display in the screen.)
(3) Press [Execution/ Finish] key.
(4) Move the needle position to the specified position by the direction key.
(5) Press [End point] or [Curve point] key. (See the middle right display in the screen.)
(6) Further, when specifying the next point, the step returns to (4).
(7) Press [Execution/ Finish] key. (See the bottom right display in the screen.)

P= 020(0.1mm)	
Input P	No022

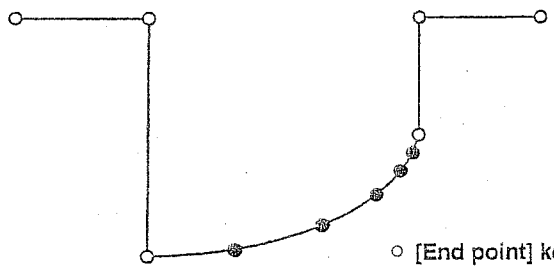
N= 001	
X= +00150R	P= 020
Y= +00100	
Sewing	

Linear **(Caution)**	
X= +00250A	P= 020
Y= +00150	S= * *
Select Function	

Explanation

This function inputs the sewing data of linear and curve.
Number of points set by [End point] or [Curve point] key is displayed as N = * * *. Number of input points is available up to 128.
Press [End point] key at the end point of linear line or curve, and press [Curve point] key at the point on the curve.

(Caution) Among the pattern data created by the line sewing, the linear line section is composed of the linear line sewing and the curve section is composed of the spline line sewing.



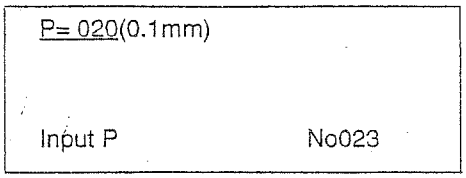
○ [End point] key
● [Curve point] key

Separately use [End point] key and [Curve point] key as shown in the figure on the left.
When pressing [Curve point] key many times at the portion where the curve is sharp, the curve you desire can draw.

Function No. 023 Linear line sewing

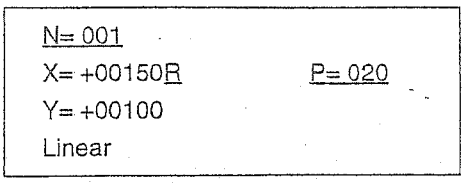
Function

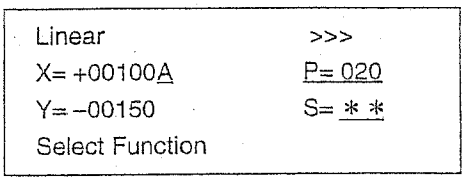
This function inputs the sewing data of linear line.



Operating procedure

(1) Select the function No. 023 from [Code] key.
(2) Specify the stitch length by the numeral key. (See the upper right display in the screen.)
(3) Press [Execution/ Finish] key.
(4) Move the needle position to the specified position by the direction key.
(5) Press [End point] key. (See the middle right display in the screen.)
(6) Further, when specifying the next point, the step returns to (4).
(7) Press [Execution/ Finish] key. (See the bottom right display in the screen.)





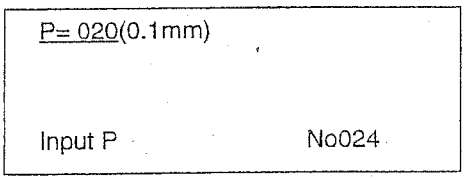
Explanation

Linear line sewing can be created by the function No. 022, line sewing, as well.
Number of points set by [End point] key is displayed as N = * * * .
Number of input points is available up to 128.

Function No. 024 Spline sewing

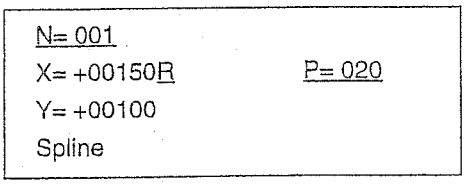
Function

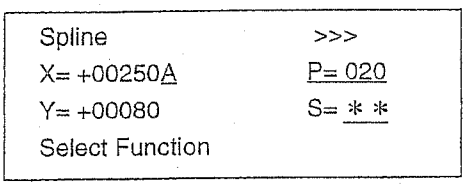
This function inputs the sewing data of linear line and curve.



Operating procedure

(1) Select the function No. 024 from [Code] key.
(2) Specify the stitch length by the numeral key. (See the upper right display in the screen.)
(3) Press [Execution/ Finish] key.
(4) Move the needle position to the specified position by the direction key.
(5) Press [End point] or [Curve point] key. (See the middle right display in the screen.)
(6) Further, when specifying the next point, the step returns to (4).
(7) Press [Execution/ Finish] key. (See the bottom right display in the screen.)





Explanation

This function inputs the sewing data of linear line and curve.
Number of points set by [End point] or [Curve point] key is displayed as N = * * * .
Number of input points is available up to 128.
Press [End point] key at the end point of linear line or curve, and press [Curve point] key at the point on the curve.
All the pattern data created by the spline sewing become the spline data.

Function No. 025 Arc sewing

Function

This function inputs the sewing data of arc.

Operating procedure

(1) Press [F2] key. (Example : point A)
When [F2] key is assigned to the other function by the memory switch, select the function No. 025 from [Code] key.

(2) Specify the stitch length by the numeral key. (See the upper right display in the screen.)

(3) Press [Execution/ Finish] key.

(4) Move the needle position to the specified position by the direction key. (Example : point B)

(5) Press [End point] key. (See the middle right display in the screen.)

(6) Move the needle position to the specified position by the direction key. (Example : point C)

(7) Press [End point] key.

(8) Press [Execution/ Finish] key. (See the bottom right display in the screen.)

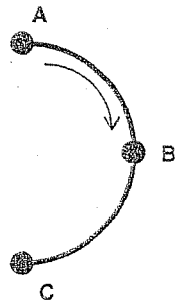
P= 020(0.1mm)	
Input P	No025

N= 001	
X=+00150R	P= 020
Y=+00100	
Arc	

Arc	->>
X= −00200A	P= 020
Y= +00100	S= * *
Select Function	

Explanation

This function inputs the sewing data of arc.
Setting of arc is performed by specifying two points.
When the arc is specified from point A to points B and C as shown in the figiure below, the sewing order is A → B → C.



Function No. 026 Circle sewing

Function

This function inputs the sewing data of circle.

Operating procedure

(1) Select the function No. 026 from [Code] key.
(2) Specify the stitch length by the numeral key. (See the upper right display in the screen.)
(3) Press [Execution/ Finish] key.
(4) Move the needle position to the specified position by the direction key. (Example : point B)
(5) Press [End point] key. (See the middle right display in the screen.)
(6) Move the needle position to the specified position by the direction key. (Example : point C)
(7) Press [End point] key.
(8) Press [Execution/ Finish] key. (See the bottom right display in the screen.)

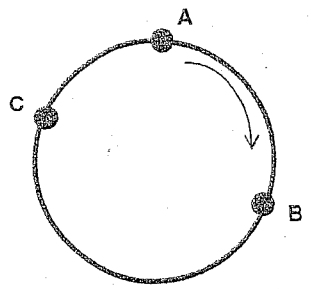
P= 020(0.1mm)	
Input P	No026

N= 001	
X= +00150R	P= 020
Y= +00100	
Circle	

Circle	>>>
X= –00050A	P= 020
Y= +00100	S= * *
Select Function	

Explanation

This function inputs the sewing data of circle.
Setting of circle is performed by specifying two points.
When you specified from point A to points, B and C in order in the pattern as shown in the figure below, the sewing order is the specified order of points (A → B → C → A).



The specifying procedure of the shapes of zigzag stitching, offset sewing, double-stitch sewing, double-stitch reverse sewing and reverse sewing is the same as that of the normal line sewing explained in the function Nos. 022 to 026. From here, the setting procedure of the respective sewings is described.

Zigzag stitching

Function No. 030 : Linear zigzag stitching
Function No. 031 : Spline zigzag stitching
Function No. 032 : Arc zigzag stitching
Function No. 032 : Circle zigzag stitching

Function

This function inputs the data performing zigzag stitching on the stitch base line (original shape line).

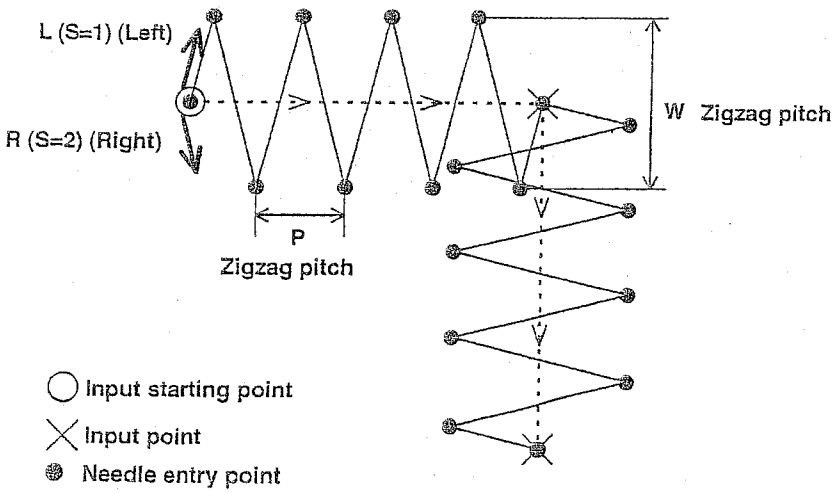
P= 020(0.1mm)
W= 030(0.1mm)
S= 1 (1:L , 2:R)
Input P No030

Operating procedure

(1) Select the zigzag stitching.
(2) Specify the zigzag pitch (P) by the numeral key.
(3) Specify the zigzag width (W) by the numeral key.
(4) Specify the direction (S) of the start of throwing by the numeral key.
1 : L (left side), 2 : R (right side)
(5) Press [Execution/ Finish] key.
(6) Input the shape.
(7) Press [Execution/ Finish] key.

Explanation

This function inputs the sewing data of the zigzag stitching.
The zigzag stitching as shown in the figure below can be created by specifying "P" (zigzag pitch) , "W" (zigzag width) and "S" (direction of the start of throwing).
The direction of the start of throwing is specified by to which side, right or left, the start of throwing should be placed as against the moving direction of the shape line as shown in the figure below.



Offset sewing

Function No. 034 : Linear offset sewing
Function No. 035 : Spline offset sewing
Function No. 036 : Arc offset sewing
Function No. 037 : Circle offset sewing

Function

This function inputs the sewing offset the specified amount from the stitch base line (original shape line).

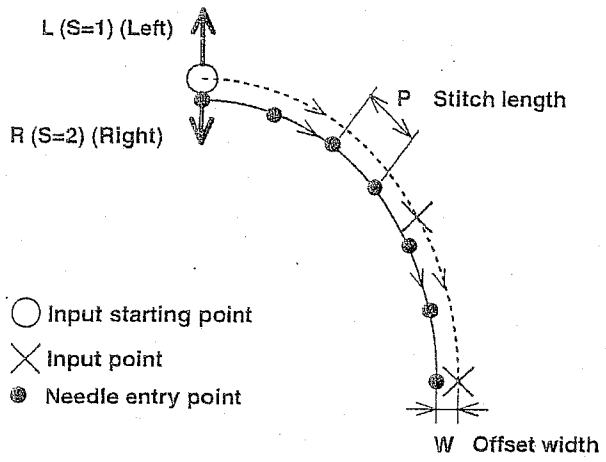
Operating procedure

(1) Select the offset sewing.
(2) Specify the stitch length (P) by the numeral key.
(3) Specify the offset amount (W) by the numeral key.
(4) Specify the direction of offset (S) by the numeral key.
1 : L (Left side), 2 : R (Right side)
(5) Press [Execution/ Finish] key.
(6) Input the shape.
(7) Press [Execution/ Finish] key.

P= 020(0.1mm)	
W= 010(0.1mm)	
S= 2 (1:L , 2:R)	
Input P	No035

Explanation

This function inputs the sewing offset the specified amount from the input shape.
This is very convenient when you desire to create the pattern referring to the periphery of a small part for attaching small parts or the like.
The offset sewing as shown in the figure below can be created by specifying "P" (stitch length), "W" (offset amount), and "S" (offset direction : to which side, right or left, the offset direction should be determined as against the moving direction of the shape line ?).
In case of the offset sewing, jump feed from input starting point to sewing start point and from sewing end point to input point of the last shape, and thread trimming at the sewing end point are automatically added.



Double-stitch sewing

Function No. 040 : Linear double-stitch sewing
Function No. 041 : Spline double-stitch sewing
Function No. 042 : Arc double-stitch sewing
Function No. 043 : Circle double-stitch sewing

Function

This function inputs the sewing that the sewing directions of stitch base line (original shape line) and the shape offset the specified amount from the stitch base line are the same.

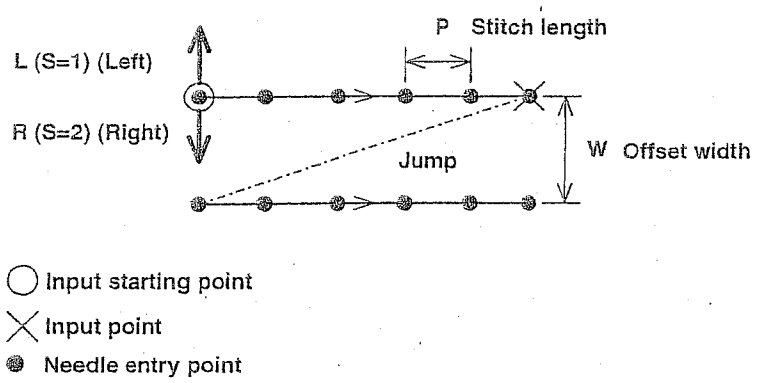
Operating procedure

(1) Select the double-stitch sewing.
(2) Specify the stitch length (P) by the numeral key.
(3) Specify the offset amount (W) by the numeral key.
(4) Specify the direction (S) of offset by the numeral key.
1 : L (Left side), 2 : R (Right side)
(5) Press [Execution/ Finish] key.
(6) Input the shape.
(7) Press [Execution/ Finish] key.

P= 020(0.1mm)
W= 040(0.1mm)
S= 2 (1:L , 2:R)
Input P No040

Explanation

This function inputs the sewing that the sewing directions of input shape and the shape offset the specified amount from the input shape are the same.
The double-stitch sewing as shown in the figure below can be created by specifying "P" (stitch length), "W" (offset amount) and "S" (offset direction).
In case of the offset sewing, jump feed from the last input point to the sewing start point of offset shape, and thread trimming at the last input point are automatically added.



Double-stitch reverse sewing

Function No. 044 : Linear double-stitch reverse sewing
Function No. 045 : Spline double-stitch reverse sewing
Function No. 046 : Arc double-stitch reverse sewing
Function No. 047 : Circle double-stitch reverse sewing

Function

This function inputs the sewing that the sewing directions of stitch base line (original shape line) and the shape offset the specified amount from the stitch base line are reverse.

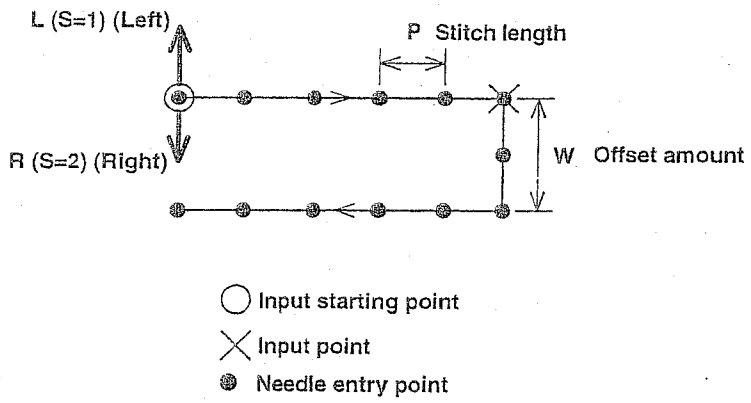
Operating procedure

(1) Select the double-stitch reverse sewing.
(2) Specify the stitch length (P) by the numeral key.
(3) Specify the offset amount (W) by the numeral key.
(4) Specify the direction (S) of offset by the numeral key.
1 : L (Left side), 2 : R (Right side)
(5) Press [Execution/ Finish] key.
(6) Input the shape.
(7) Press [Execution/ Finish] key.

P= 020(0.1mm)
W= 040(0.1mm)
S= 2 (1:L , 2:R)
Input P No044

Explanation

This function inputs the sewing that the sewing directions of input shape and the shape offset the specified amount from the input shape are reverse.
The double-stitch sewing as shown in the figure below can be created by specifying "P" (stitch length), "W" (offset amount) and "S" (offset direction).
In case of the offset sewing, the sewing from the last input point to the sewing start point of offset shape is automatically added.



Reverse sewing

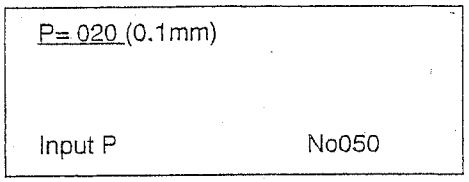
Function No. 050 : Linear reverse sewing
Function No. 051 : Spline reverse sewing
Function No. 052 : Arc reverse sewing
Function No. 053 : Circle reverse sewing

Function

This function inputs the sewing of stitch base line (original shape line) and the shape returned the stitch base line in the reverse direction.

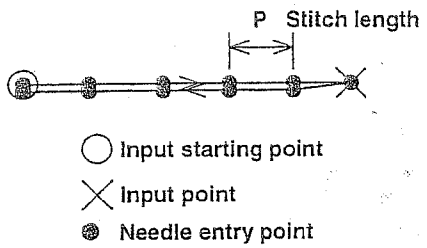
Operating procedure

(1) Select the double-stitch reverse sewing.
(2) Specify the stitch length (P) by the numeral key.
(3) Press [Execution/ Finish] key.
(4) Input the shape.
(5) Press [Execution/ Finish] key.



Explanation

This function inputs the sewing that the sewing directions of input shape and the shape to be returned are reverse.
The double-stitch sewing as shown in the figure on the right can be created by specifying "P" (stitch length)
In case of the reverse sewing, needle entry point of input shape is the same as that of the shape returned in the reverse direction.



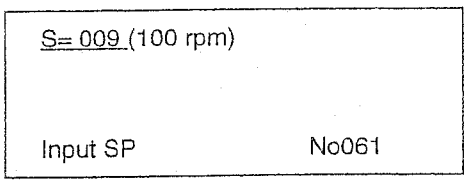
Function No. 061 Change of point speed

Function

This function controls the sewing speed in the designated section.

Operating procedure

(1) Press [Point speed change] key.
(2) Specify the sewing speed (S) by the numeral key. (See the figure on the right.)
(3) Press [Execution/ Finish] key.
(4) Specify the range of changing the sewing speed by [Feed forward] or [Feed backward] key.
(5) Press [Execution/ Finish] key.



Explanation

The function of change of point speed can change not only the sewing created by point sewing input but also the sewing input by any function such as spline sewing or the like.
Even if specifying the sewing speed other than the specification of the sewing machine main unit using the function of change of point speed, the sewing machine operates within the sewing speed determined in accordance with the stitch length.

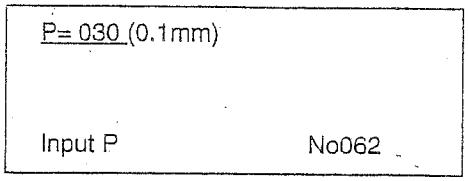
Function No. 062 Change of stitch length

Function

This function changes the stitch length in the designated section.

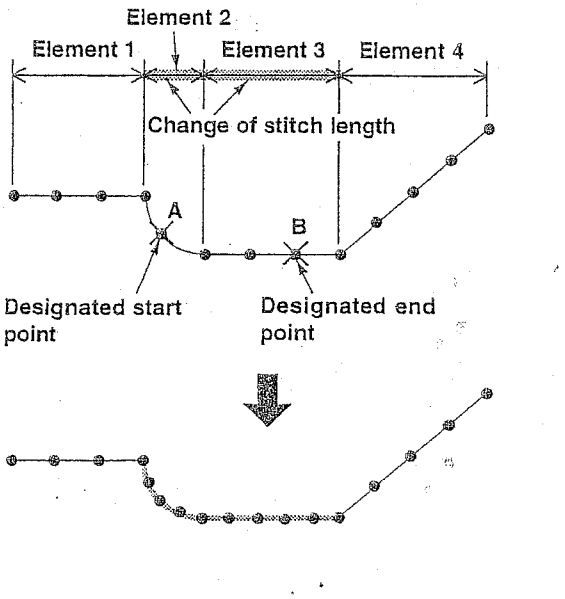
Operating procedure

(1) Select the function No. 062 from [Code] key.
(2) Specify the stitch length (P) by the numeral key. (See the figure on the right.)
(3) Press [Execution/ Finish] key.
(4) Specify the range of performing change of sewing speed by [Feed forward] or [Feed backward] key.
(5) Press [Execution/ Finish] key.



Explanation

This function performs the change of stitch length in the unit of element.
In case of the pattern as shown in the figure on the right, when the change of the stitch length from the designated start point A in the 2nd element to the designated end point B in the 3rd element is specified, the 2nd element and the 3rd element become the section of the change of stitch length, and the stitch length is changed as shown in the figure on the right.
However, when there is the point sewing element or the element changed to point sewing in the designated section (example : spline sewing, or linear zigzag stitching), the element is not changed.



Function No. 063 Element deletion

Function

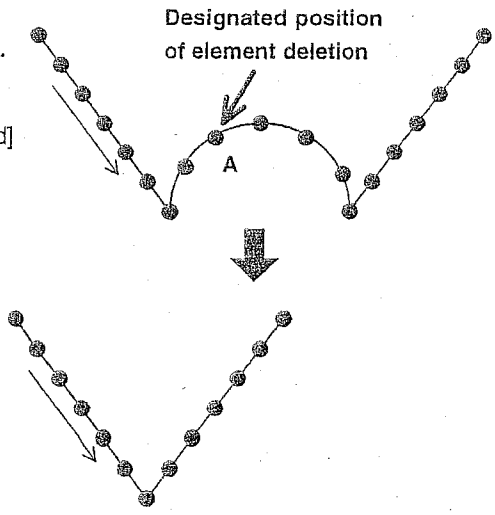
This function deletes the sewing data in the unit of element.

Operating procedure

(1) Move to the element desired to delete by [Feed forward] or [Feed backward] key.
(2) Press [Element delete] key.

Explanation

This function deletes the designated element.
The pattern after the deleted element moves so that it is carried.
After all, when pressing [Element delete] key at point A of the pattern as shown in the figure on the right, the arc sewing which is the 2nd element is deleted and the 3rd element moves so that it is carried.



Function No. 064 Automatic back-tack

Function

This function creates the back-tack in the front and rear of the designated sewing element.

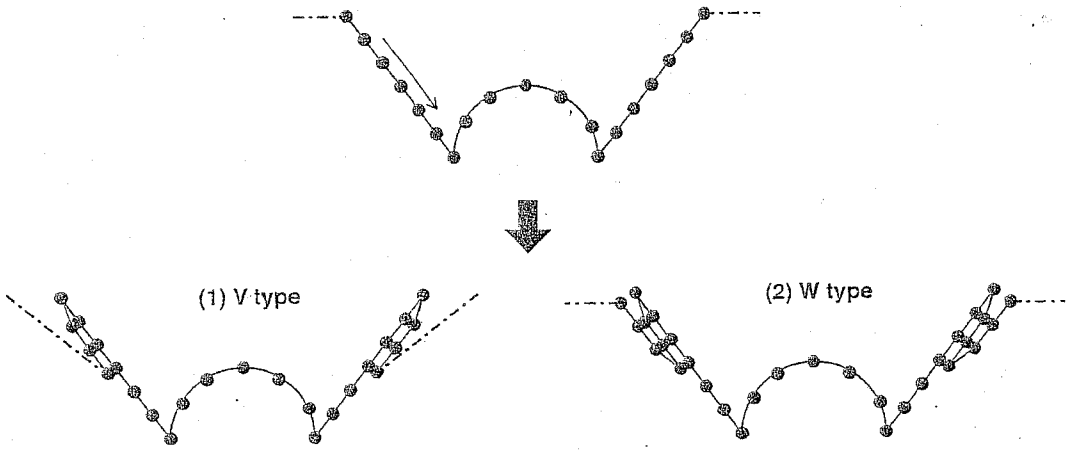
Operating procedure

(1) Move to the element desired to insert the back-tack by [Feed forward] or [Feed backward] key.
(2) Select the function No. 064 by [Code] key.
(3) Specify "SN" (number of stitches of back-tack at the sewing start) by the numeral key.
(4) Specify "EN" (number of stitches of back-tack at the sewing end) by the numeral key.
(5) Specify "T" (type of back-tack) by the numeral key.
(6) Press [Execution/ Finish] key.

SN= 3	
EN= 3	
T= 2 (1:V,2:Z)	
Input Num	No064

Explanation

This function creates the back-tack in the front and rear of the designated element.
However, when the sewing elements continue before and after the designated element, this function creates the back-tack before and after those sewing elements.
It is possible to modify the back-tack by the modification functions such as point deletion, point move, etc. since the back-tack is created as the point sewing element.
The back-tack is created at the same point of the needle entry point of the designated element.



Function No. 065 Condensation stitching

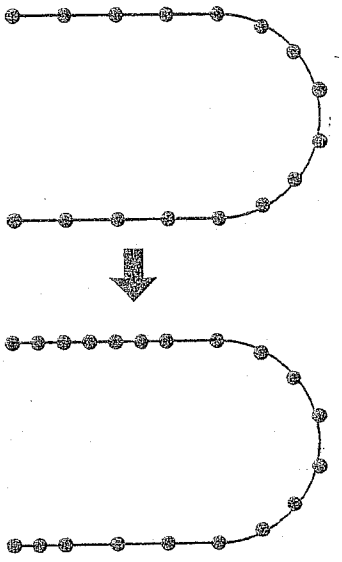
Function

This function changes the front and rear of the designated sewing element to the sewing of the designated stitch length.

SN= 6
EN= 3
P= 010 (0.1mm)
Input Num No065

Operating procedure

(1) Move to the element desired to insert the condensation stitching by [Feed forward] or [Feed backward] key.
(2) Select the function No. 065 by [Code] key.
(3) Specify "SN" (number of stitches of condensation stitching at the sewing start) by the numeral key.
(4) Specify "EN" (number of stitches of condensation stitching at the sewing end) by the numeral key.
(5) Specify "P" (stitch length) by the numeral key.
(6) Press [Execution/ Finish] key.



Explanation

This function changes the front and rear of the designated element to the sewing of the designated stitch length. However, when the sewing elements continue in the front and rear of the designated element, this function changes the front and rear of those sewing elements to the designated stitch length.
Condensation stitching is created as the point sewing element, and it is possible to modify the condensation stitching by the modification functions such as point deletion, point move, etc.

Function No. 066 Overlapping stitching

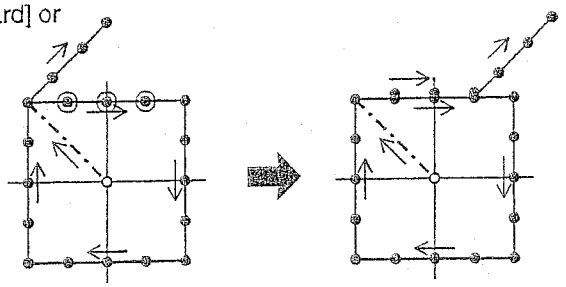
Function

This function specifies the needle entry point on the sewing pattern as the overlapping stitching in the rear of the designated sewing element.

Operating procedure

Sure (Y/C)
Over Stitch No066

(1) Move to the element where you desire to add the overlapping stitching by [Feed forward] or [Feed backward] key.
(2) Select the function No. 066 by [Code] key.
(3) An enquiry whether changeover to point sewing is acceptable is displyed in the screen (Sure (Y/C).). Then press [Execution/ Finish] key.
When pressing [Clear] key, the selection of function is canceled.
(4) Move to the needle entry point where you desire to perform the overlapping stitching by [Feed forward] or [Feed backward] key.
(5) Specify the needle entry point by [End point] key.
(6) Further, when you desire to specify the next point, the step returns to (4).
(7) Press [Execution/ Finish] key.



◎ Specified point of overlapping stitching

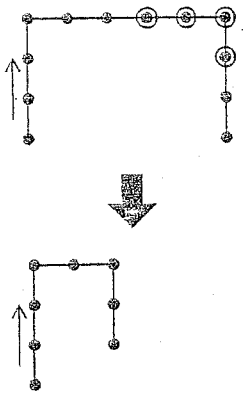
Explanation

All elements which have been added in the overlapping stitching become the elements of point sewing.
The data which are located in the rear of the elements of overlapping stitching perform relative displacement as much as the elements of overlapping stitching.

Function No. 070 Relative point deletion

Function

This function performs the relative deletion of the needle entry point in the specified range.



Operating procedure

(1) Move to the needle point where you desire to move by [Feed forward] or [Feed backward] key.
(2) Select the function No. 071 by [Code] key.
(3) An enquiry whether changeover to point sewing is acceptable is displayed in the screen. Then press [Execution/ Finish] key. When pressing [Clear] key, the selection of function is canceled.
(4) Move to the last needle entry point where you desire to delete by [Feed forward] or [Feed backward] key.
(5) Press [Execution/ Finish] key.

Explanation

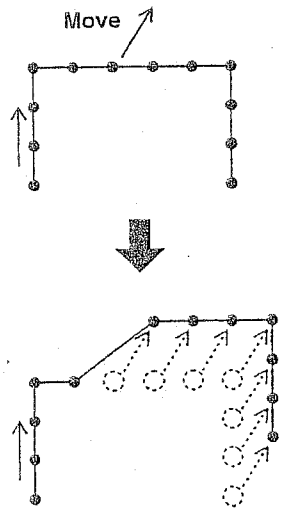
In case of the relative point deletion, the data after the points which have been deleted will move as many as the points.

◎ Specified point of relative point deletion

Function No. 071 Relative point move

Function

This function performs relative displacement of the needle entry point.



Operating procedure

(1) Move to the needle entry point where you desire to move by [Feed forward] or [Feed backward] key.
(2) Select the function No. 071 by [Code] key.
(3) An enquiry whether changeover to point sewing is acceptable is displayed in the screen. Then press [Execution/ Finish] key. When pressing [Clear] key, the selection of function is canceled.
(4) Move to the position where you desire to move by the direction key.
(5) Press [End point] key. (Can be omitted)
(6) Press [Execution/ Finish] key.

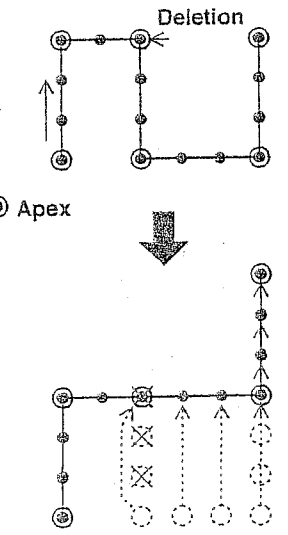
Explanation

In case of the relative point move, the data after the points which have moved will move as many as the points.

Function No. 072 Relative apex deletion

Function

This function performs relative deletion of an apex of the element of linear or jump.



◎ Apex

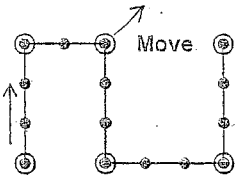
Operating procedure

(1) Move to the apex where you desire to delete by [Feed forward] or [Feed backward] key.
(2) Select the function No. 072 by [Code] key, and the apex can be deleted.

Explanation

In case of the relative apex deletion, the data after the apex which has been deleted will move as many as the points as shown in the figure on the right.
The relative apex deletion cannot be selected at any position other than the apex.
The apex of the element of linear or jump means the point where [End point] key is pressed when inputting the pattern.

Function No. 073 Relative apex move

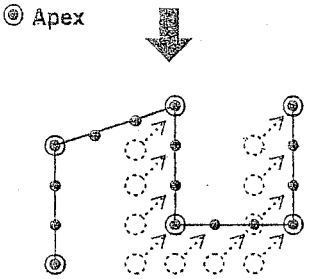


Function

This function moves an apex of the element of linear or jump.

Operating procedure

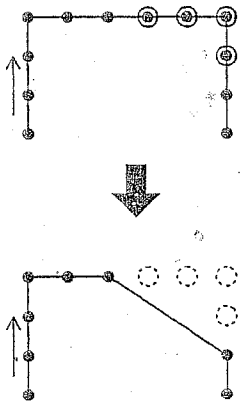
(1) Move to the apex where you desire to move by [Feed forward] or [Feed backward] key.
(2) Select the function No. 073 by [Code] key.
(3) Move the specified apex to the point where you desire to move by the moving key.
(4) Press [End point] key. (Can be omitted)
(5) Press [Execution/ Finish] key.



Explanation

In case of the relative apex move, the data after the apex has moved will move as many as the points.
The relative apex move cannot be selected at any point other than the apex.
The apex of the element of linear or jump means the point where [End point] key is pressed when inputting the pattern.

Function No. 074 Absolute point deletion



Function

This function performs the absolue deletion of the needle entry point in the designated range.

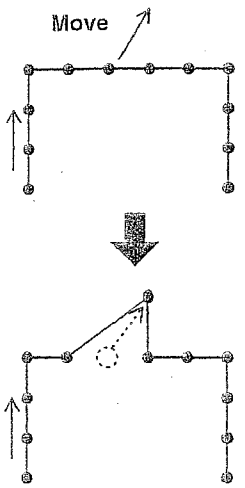
Operating procedure

(1) Move to the needle entry point where you desire to delete by [Feed forward] or [Feed backward] key.
(2) Select the function No. 074 by [Code] key.
(3) An enquiry whether changeover to point sewing is acceptable is displayed in the screen. Then press [Execution/ Finish] key. When pressing [Clear] key, the selection of function is canceled.
(4) Move to the last needle entry point where you desire to delete by [Forward] or [Backward] key.
(5) Press [Execution/ Finish] key.

Explanation

In case of the absolute point deletion, the data after the points which have been deleted will not move.
It is not possible by the absolute point deletion to create the sewing beyond the maximum stitch length of the sewing machine.

Function No. 075 Absolue point move



Function

This function performs the absolute move of the needle entry point.

Operating procedure

(1) Move to the needle entry point where you desire to move by [Feed forward] or [Feed backward] key.
(2) Select the function No. 075 by [Code] key.
(3) An enquiry whether changeover to point sewing is acceptable is displayed in the screen. Then press [Execution/ Finish] key. When pressing [Clear] key, the selection of function is canceled.
(4) Move to the position where you desire to move by the direction key.
(5) Press [End point] key. (Can be omitted)
(6) Press [Execution/ Finish] key.

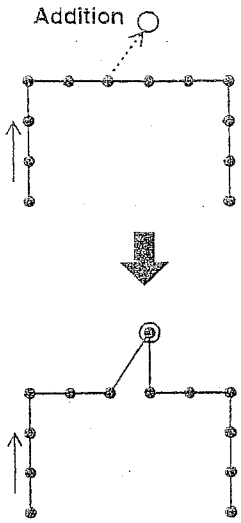
Explanation

In case of the absolute point move, the data after the point which has moved will not move.
It is not possible by the absolute point move to create the sewing beyond the maximum stitch length of the sewing machine.

Function No. 076 Absolute point addition

Function

This function performs the absolute addition of the needle entry point.



Operating procedure

(1) Move the needle entry point by [Feed forward] or [Feed backward] key. A needle entry point is added after the current position.
(2) Select the function No. 076 by [Code] key.
(3) An enquiry whether changeover to point sewing is acceptable is displayed in the screen. Then press [Execution/ Finish] key. When pressing [Clear] key, the selection of function is canceled.
(4) Move to the position where you desire to move by the direction key.
(5) Press [End point] key.
(6) When you desire to continue adding the next point, return to the step (4).
(7) Press [Execution/ Finish] key.

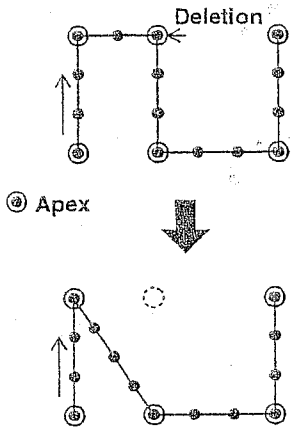
Explanation

In case of the absolute point addition, the data after the point which has been added will not move.
It is not possible by the absolute point addition to create the sewing beyond the maximum stitch length of the sewing machine.

Function No. 077 Absolute apex deletion

Function

This function performs the absolute deletion of an apex of the element of linear or jump.



Operating procedure

(1) Move to the apex where you desire to delete by [Feed forward] or [Feed backward] key.
(2) Select the function No. 077 by [Code] key. Then the apex can be deleted.

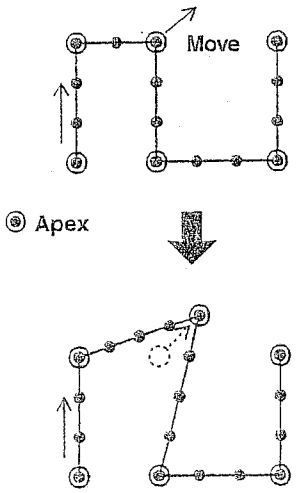
Explanation

In case of the absolute apex deletion, the apexes after the apex which has been deleted will not move.
The absolute apex deletion cannot be selected at any position other than the apex.
The apex of the element of linear or jump means the point where [End point] key is pressed when inputting the pattern.

Function No. 078 Absolute apex move

Function

This function moves an apex of the element of linear or jump.



Operating procedure

(1) Move to the apex where you desire to delete by [Feed forward] or [Feed backward] key.
(2) Select the function No. 078 by [Code] key.
(3) Move the designated apex to the point where you desire to move by the moving key.
(4) Press [End point] key. (Can be omitted)
(5) Press [Execution/ Finish] key.

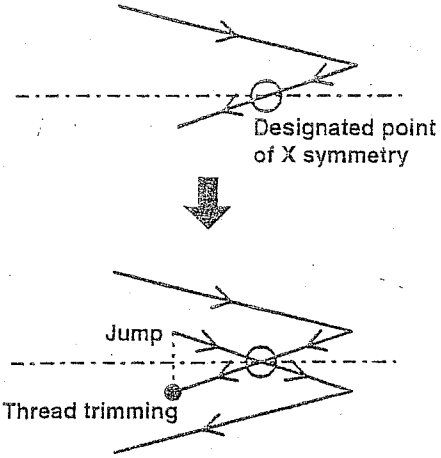
Explanation

In case of the absolute apex move, the apexes after the apex which has moved will not move.
The absolute apex move cannot be selected at any position other than the apex.
The apex of the element of linear or jump means the point where [End point] key is pressed when inputting the pattern.

Function No. 082 X symmetry

Function

This function can add a pattern symmetrical to the created pattern on the X-axis taking the designated point as reference.



Operating procedure

(1) Move to the point where you desire to make the reference of X-axis symmetry by [Feed forward] or [Feed backward] key.

(2) Select the function No. 082 by [Code] key, and a pattern symmetrical to the created pattern on the X-axis can be added.

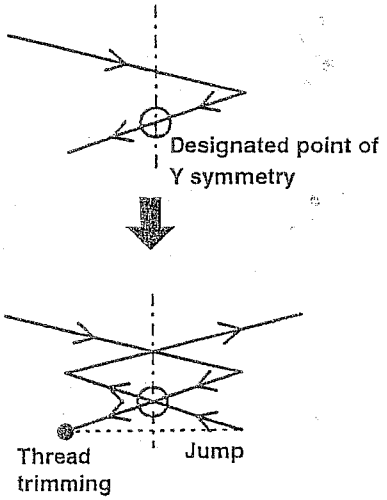
Explanation

Sewing order of the added pattern is from the sewing end point of the original pattern to the sewing start point.
The thread trimming and the jump will be automatically added when the sewing end point of the original pattern is not aligned with the sewing start point of the added pattern.

Function No. 083 Y symmetry

Function

This function can add a pattern symmetrical to the created pattern on the Y-axis taking the designated point as reference.



Operating procedure

(1) Move to the point where you desire to make the reference of Y-axis symmetry by [Feed forward] or [Feed backward] key.

(2) Select the function No. 083 by [Code] key, and a pattern symmetrical to the created pattern on the Y-axis can be added.

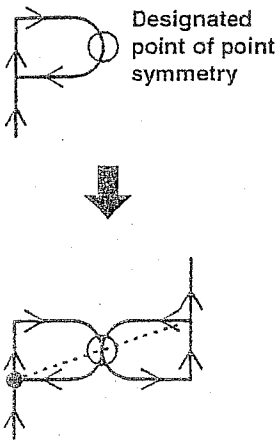
Explanation

Sewing order of the added pattern is from the sewing end point of the original pattern to the sewing start point.
The thread trimming and the jump will be automatically added when the sewing end point of the original pattern is not aligned with the sewing start point of the added pattern.

Function No. 084 Point symmetry

Function

This function can add a pattern symmetrical to the point of the created pattern taking the designated point as reference.



Operating procedure

(1) Move to the point where you desire to make the reference of point symmetry by [Feed forward] or [Feed backward] key.

(2) Select the function No. 084 by [Code] key, and a pattern symmetrical to the point of the created pattern can be added.

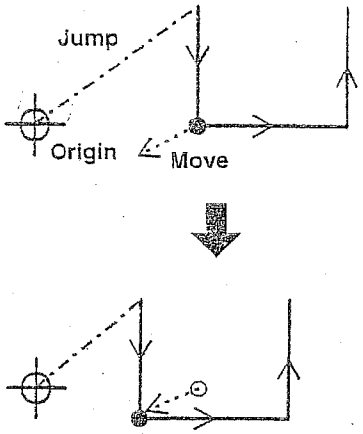
Explanation

Sewing order of the added pattern is from the sewing end point of the original pattern to the sewing start point.
The thread trimming and the jump will be automatically added when the sewing end point of the original pattern is not aligned with the sewing start point of the added pattern.

Function No. 085 Pattern move

Function

This function can move the whole pattern as much as the designated amount.



Operating procedure

(1) Move to the point where you desire to make the reference of pattern move by [Feed forward] or [Feed backward] key.
(2) Select the function No. 085 by [Code] key.
(3) Specify the moving destination of the reference point by the moving key.
(4) Press [Execution/ Finish] key.

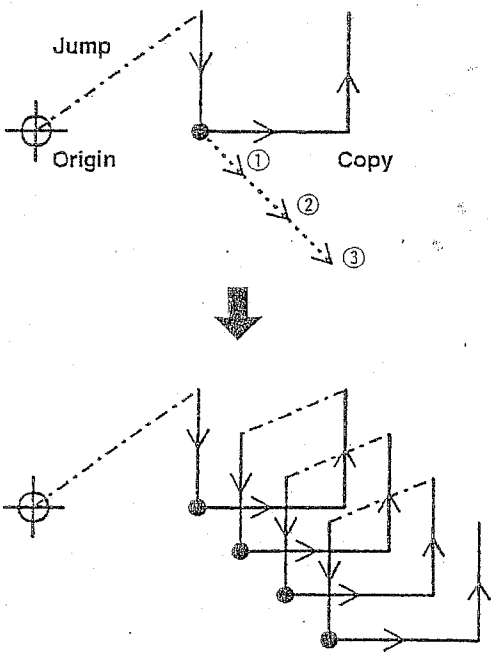
Explanation

In case of the pattern move, take care not to exceed the sewing possible range of the sewing machine.

Function No. 086 Pattern copy

Function

This function can copy the whole pattern while designating the destination of the copy.



Operating procedure

(1) Move to the point where you desire to make the reference of pattern copy by [Feed forward] or [Feed backward] key.
(2) Select the function No. 086 by [Code] key.
(3) Specify the moving destination of the reference point by the moving key.
(4) Press [End point] key.
(5) When repeating the copy, return to the step (3).
(6) Press [Execution/ Finish] key.

Explanation

In case of the pattern copy, take care not to exceed the sewing possible range of the sewing machine.

Function No. 087 Pattern deletion

Function

This function can delete the whole pattern.

Operating procedure

(1) Select the function No. 087 by [Code] key.
(2) If the pattern deletion is acceptable, press [Execution/Finish] key.
When pressing [Clear] key, the screen returns to "Select Function" screen.

Explanation

Pattern deletion cannot be restored. So, be careful.

Function No. 088 ROM pattern reading

Function

This function reads the sewing pattern from the Data ROM.

Operating procedure

(1) Press [Pattern data read] key.
(2) Specify "No" (pattern No.) by the numeral key.
(3) Specify "XS" (X scale) by the numeral key.
(4) Specify "YS" (Y scale) by thenumeral key.
(5) Press [Execution/ Finish] key.

```
No= 01
XS= 1000 (0.1%) P
YS= 1000 (0.1%)
Input Read          No088
```

Explanation

X•Y scale can be specified from 0.1 % to 400.0 %.
However, the scale cannot exceed the maximum stitch length and the sewing possible range of the sewing machine.
When performing pattern reading on the sewing pattern, the pattern which has been read is added to the rear of the current needle position.
The remaining patterns are added to the rear of the pattern which has been read.
The ROM pattern reading corresponds to 58C256 (font 16) only.
Refer to page 51 for the reading procedure of 58C65 (font 11).

Function No. 089 ROM pattern writing

Function

This function writes the sewing pattern onto the Data ROM.

Operating procedure

(1) Press [Pattern data write] key.
(2) Specify "No" (pattern No.) by the numeral key.
(3) Press [Execution/ Finish] key.

```
No= 01


Input Wrt '         No089
```

Explanation

Never turn OFF the power during pattern writing since the data stored in ROM may be damaged.
The ROM pattern writing corresponds to 58C256 (font 16) only.
When the same pattern No. has been already registered in the ROM, you can select whether or not you perform overwriting.
When overwriting has been performed once, the pattern No. cannot be restored. So, securely manage the pattern No.
Pattern Nos. can be set from "01" to "99".

Function No. 091 Inversion setting

Function

This function sets the inversion mode of the pattern which is to be created from now.

Operating procedure

(1) Select the function No. 091 by [Code] key.
(2) Specify "M" (mode) by the numeral key.

```
M= 2
(1:NO, 2:AUTO
      , 3:MANUAL)
Input Mode          No091
```

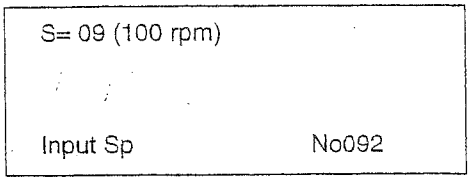
Explanation

This function sets the operation mode of the inverting clamp.

Function No. 092 Change of speed

Function

This function limits the sewing speed of the sewing element which is to be created from now.



Operating procedure

(1) Select the function No. 092 by [Code] key.
(2) Specify "S" (speed) by the numeral key.

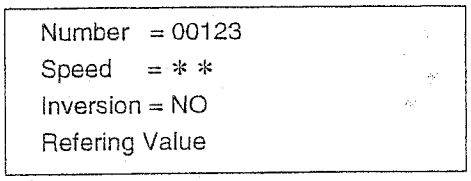
Explanation

Change of speed is applied to one sewing element which is created next only.
The sewing speed of the sewing machine depends on the stitch length. However, you can limit the sewing speed making use of this function.

Function No. 093 Reference of set value

Function

This function refers the number of total stitches, limited sewing speed, inversion mode etc. of the sewing pattern.



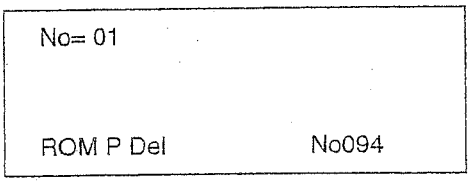
Operating procedure

(1) Select the function No. 093 by [Code] key.
(2) The screen can be moved up or down by the scroll key.
(3) Press [Execution/ Finish] key, and the screen will return to "Select Function" screen.

Function No. 094 ROM pattern deletion

Function

This function deletes the pattern stored in ROM.



Operating procedure

(1) Select the function No. 094 by [Code] key.
(2) Specify "No" (pattern No.) by the numeral key.
(3) If the deletion is acceptable, press [Execution/ Finish] key.
When pressing [Clear] key, the screen will return to "Select Function" screen.

Explanation

When the pattern has been deleted once, the pattern cannot be restored. So, securely manage the pattern No.

Function No. 095 ROM formatting

Function

This function initializes the ROM. All patterns are deleted.

Operating procedure

(1) Select the function No. 095 by [Code] key.
(2) If the execution of the ROM formatting is acceptable, press [Execution/ Finish] key.

Explanation

When the ROM is initialized once, the patterns stored in the ROM cannot be restored.

Function No. 096 ROM pattern list

Function

This function displays the list of patterns stored in the ROM.

Operating procedure

(1) Select the function No. 096 by [Code] key.
(2) The screen can be moved up or down by the scroll key.
(3) After checking the list, press [Execution/ Finish] key.

```
No= 1
No=12
No=13
ROM Pat List :
```

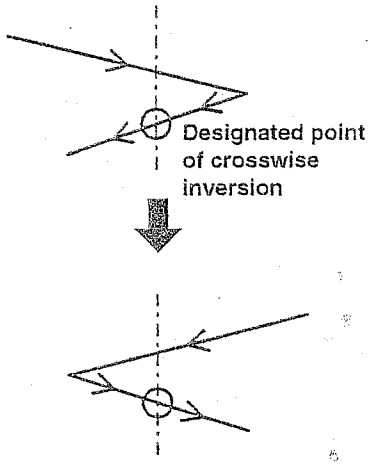
Function No. 098 Crosswise inversion

Function

This function creates a pattern symmetrical to the created pattern on the Y-axis taking the specified point as reference.

Operating procedure

(1) Move to the point where you desire to make it the reference of crosswise inversion by [Feed forward] or [Feed backward] key.
(2) Select the function No. 098 by [Code] key, and a pattern symmetrical to the created pattern on the Y-axis can be created.



Explanation

Sewing order of the created pattern is the same as that of the original pattern.
The original pattern will not remain.

Function No. 110 Selection of end method

Function

This function sets whether the needle entry point should be traced after inputting the drawing of sewing element.

Operating procedure

(1) Select the function No. 110 by [Code] key.
(2) Specify "T" (with/without tracing) by the ten key.

```
M=1
(1 : TRACE-ON,
 2 : TRACE-OFF)
Input Mthd          No110
```

Explanation

When "trace ON" is set, after inputting the drawing of sewing element, the input mode will end by tracing the needle entry point after performing the input operation of returning to the input start point tracing the input point.

Function No. 111 Selection of coordinate system

Function

This function selects the display of coordinates when inputting the drawing.

Operating procedure

(1) Select the function No. 111 by [Code] key.
(2) Specify "C" (1 : relative coordinates, 2 : absolute coordinates) by the numeral key.

```
T=1
(1 : RELATIVE,
 2 : ABSOLUTE)
Input Type          No111
```

10. List of input function

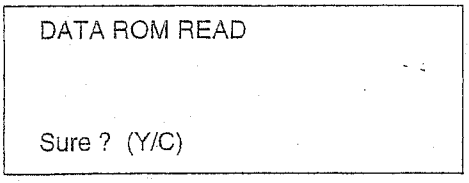
Function No.	Function	Ref. page	Function No.	Function	Ref. page
001	Thread trimming	27	061	Change of point speed	38
002	Second origin	28	062	Change of stitch length	39
003	Temporary stop	28	063	Element deletion	39
005	Inversion point	28	064	Automatic back-tack	40
020	Jump	29	065	Condensation stitching	41
021	Point sewing	29	066	Overlapping stitching	41
022	Line sewing	30	070	Relative point deletion	42
023	Linear sewing	31	071	Relative point move	42
024	Spline sewing	31	072	Relative apex deletion	42
025	Arc sewing	32	073	Relative apex move	43
026	Circle sewing	33	074	Absolute point deletion	43
030	Linear zigzag sewing	34	075	Absolute point move	43
031	Spline zigzag sewing	34	076	Absolute point addition	44
032	Arc zigzag sewing	34	077	Absolute apex deletion	44
033	Circle zigzag sewing	30	078	Absolute apex move	44
034	Linear offset sewing	35	082	X symmetry	45
035	Spline offset sewing	35	083	Y symmetry	45
036	Arc offset sewing	35	084	Point symmetry	45
037	Circle offset sewing	35	085	Pattern move	46
040	Linear double-stitch sewing	36	086	Pattern copy	46
041	Splinr double-stitch sewing	36	087	Pattern deletion	46
042	Arc double-stitch sewing	36	088	ROM pattern reading	47
043	Circle double-stitch sewing	36	089	ROM pattern writing	47
044	Linear double-stitch reverse sewing	37	091	Inversion setting	47
045	Spline double-stitch reverse sewing	37	092	Change of speed	48
046	Arc double-stitch reverse sewing	37	093	Reference of set value	48
047	Circle double-stitch reverse sewing	37	094	ROM pattern deletion	48
050	Linear reverse sewing	38	095	ROM formatting	48
051	Spline reverse sewing	38	096	ROM pattern list	49
052	Arc reverse sewing	38	098	Crosswise inversion	49
053	Circle reverse sewing	38	110	Selection of end method	49
			111	Selection of coordinate system	49

Ⅲ. ROM READING MODE/ROM WRITING MODE

PGM-7 has the function to read the pattern data from the Data ROM mounted on the sewing machine main unit to the memory inside the PGM-7 and to write the patterns which have been read into the Data ROM.. The patterns which have been read in the PGM-7 are stored even after turning OFF the power (back-up function). Pattern copy can be performed with ease when you desire to use the same pattern with the plural sewing machines.

1. ROM reading mode

PGM-7 can read the pattern data from the Data ROM mounted on the sewing machine main unit to the memory inside the PGM-7.
In case of the input mode, the pattern data of the Data ROM (58C65, font 11) for the AMS-205/206 series cannot be read. However, reading is possible in the ROM reading mode.



(1) Pressing [Pattern data read] key, turn ON the power.

(Caution) When turning ON the power, communication with the sewing machine starts within approximately one second. Hold pressing [Pattern data read] key until the communication starts.
The display will be changed over when the communication with the sewing machine is over (for approximately 15 seconds).

(2) If the ROM data reading is acceptable, press [Execution/ Finish] key.

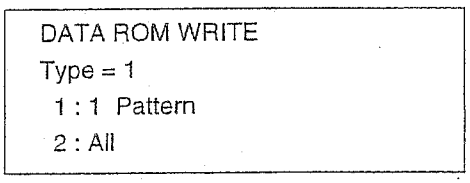
(Caution) After the data have been read, the data previously read are deleted.

(3) When the data reading is completed, turn OFF the power.

2. ROM writing mode

PGM-7 writes one by one or all of the pattern data read in the memory inside the PGM-7 in the ROM reading mode into the Data ROM mounted on the sewing machine main unit. The Data ROM which can be written in the ROM writing mode is the Data ROM (58C256, font 16) for LK-1910/1920/1930/1941 series only. The pattern data for AMS-205/206 series which have been read in the ROM reading mode will be automatically re-written to the pattern data for LK-1910/1920/1930/1941 series by the PGM-7.
(1) Pressing [Pattern data write] key, turn ON the power.

(Caution) When turning ON the power, communication with the sewing machine starts within approximately one second. Hold pressing [Pattern data write] key until the communication starts.
The display will be changed over when the communication with the sewing machine is over (for approximately 15 seconds).



(2) When writing the pattern data one by one, press [1] by the numeral key, and when writing the all patterns, press [2] by the numeral key.
(3) Press [Execution/ Finish] key.
Move to the step (5) for all pattern copy.
(4) Input by the numeral key with regard to which pattern in the memory should be written, and press [Return] key.
Next, input by the numeral key with reagard to what number should be put on the pattern which is written into the Data ROM, and press [Return] key.
When pressing [Execution/ Finish] key, writing starts. (For approximately 15 seconds)
When the same pattern number is in the Data ROM, if the overwriting is acceptable, press again [Execution/ Finish] key.
Here, when pressing [Clear] key, the screen returns to the pattern No. designation screen.
Writing the pattern data one by one can be executed in repetition.
To end the operation, turn OFF the power.

(Caution) Never turn OFF the power during writing.

(5) If overwriting of the whole Data ROM is acceptable, press [Execution/ Finish] key.
To end the operation, turn OFF the power.

Ⅳ . MEMORY SWITCH MODE

1. Start-up of the memory switch mode

Pressing [5] of the numeral key, turn ON the power to enter the memory switch mode.
The function of [F1] or [F2] can be changed.

023. FUNC KEY	
F1	2
F2	25

2. Basic operation

Display of the memory switch mode in the screen is as shown in the figure on the right.
Setting procedure of changing the respective items

① Function No. : [M1] key → change by the scroll key.
② Item 1 setting contents : [M2] key → change by the scroll key.
③ Item 2 setting contents : [M3] key → change by the scroll key.
④ Item 3 setting contents : [M4] key → change by the scroll key.

Function No.	Contents of function
Item 1	Setting item 1
Item 2	Setting item 2
Item 3	Setting item 3

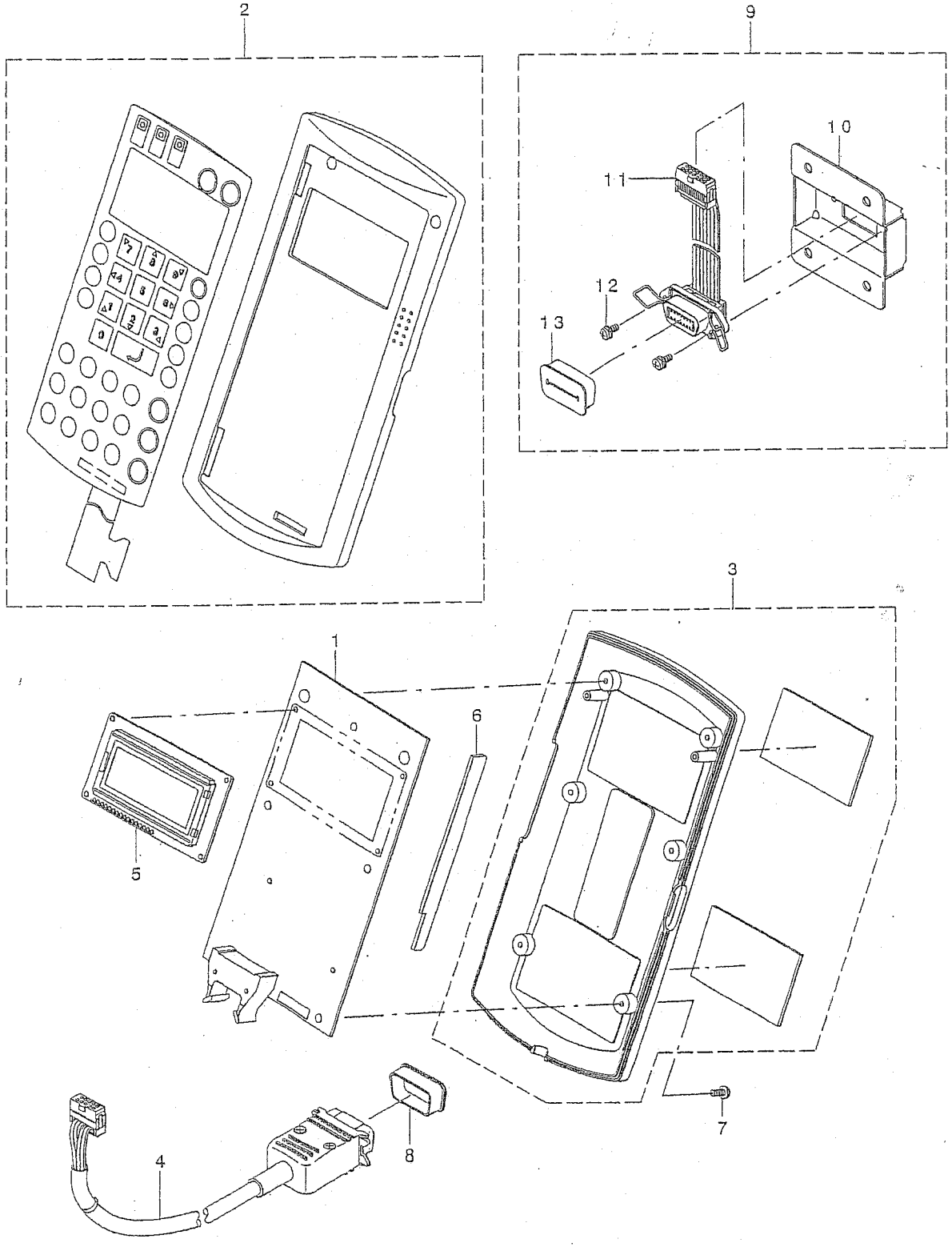
The respective items will be decided by [Enter] key after changing by the scroll key.

3. List of memory switch function

Setting given on a single-underline is the standard setting value.

No.	Function	Item	Setting value	Contents
023	FUNC KEY	F1	1 up (Initial value 2 : 2nd origin)	Specifies the function of [F1] key in the input mode. Inputs the function number.
		F2	1 up (Initial value 25 : INPUT ARC)	Specifies the function of [F2] key in the input mode. Inputs the function number.

V . PARTS LIST



REF. NO	NOTE	PART NO.	DESCRIPTION	ヒョウメイ	Qty
1		G8601-007-AA0	PGM BOARD A ASM.	PGMｷﾊﾞﾝAｸﾐ	1
2		G8503-007-0A0	OPERATION BOX UPPER CASE ASM.	ｿｳｻﾎﾞｯｸｽｳｴｹｰｽｸﾐ	1
3		M1031-580-0A0	OPERATION BOX LOWER CASE ASM.	ｿｳｻﾎﾞｯｸｽｼﾀｹｰｽｸﾐ	1
4		G9001-007-0A0	PGM CONNECTION CABLE ASM.	PGMｾﾂｿﾞｸｹｰﾌﾞﾙｸﾐ	1
5		M8541-580-0A0	LCD ASM.	ｴｷｼｮｳﾋｮｳｼﾞｷｸﾐ	1
6		G1002-007-000	INPUT DEVICE COVERING BOARD	ﾆｭｳﾘｮｸｿｳﾁﾒｶｸｼｲﾀ	1
7		ST-4031051-SN	TAPPING SCREW D=3-24 L=10	ﾀｯﾋﾟﾝﾈｼﾞ D=3-24 L=10	6
8		HK-0232901-4C	DUST CAP	ﾀﾞｽﾄｷｬｯﾌﾟ	1
9		G8502-007-0A0	PGM-LK CONNECTION ASM.	PGM-LKｾﾂｿﾞｸｸﾐ	1
10		G1001-007-000	PANEL CONNECTOR FITTING BOARD	ﾊﾟﾈﾙｺﾈｸﾀﾄﾘﾂｹｲﾀ	(1)
11		G9002-007-0A0	PGM CONNECTION CORD ASM.	PGMｾﾂｿﾞｸｺｰﾄﾞｸﾐ	(1)
12		SL-4030881-SC	SCREW M3X8	ﾅﾍﾞｺﾈｼﾞ ｾﾑｽ M3X0.5 L=8	(2)
13		HK-0232901-4B	DUST CAP	ﾀﾞｽﾄｷｬｯﾌﾟ	(1)

MEMO

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Please do not hesitate to contact our distributors or agents in your area for further information when necessary.

* The description covered in this instruction manual is subject to change for improvement of the commodity without notice.

99 - 12 Printed in Japan (E)