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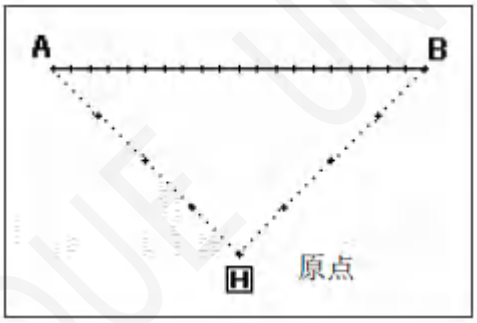
Chapter one: Flow of data creation

The flow of operations for creating data and the transition of screen displays are explained here. The flow of creating simple stitching data, as shown below, is explained in this section.



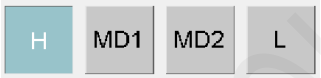
1. Start from the standard screen. Press  . .	
2. The menu mode will open. Press  .	

3. The “INPUT MODE” screen will open

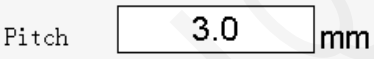
①Clear the input data

To clear the input data and input new data, press  to continue input after the data already input, press  .

②Set the speed.



③Set the stitch length



Set in the range of (0.1mm) to (12.7mm) using  to  and  icons.

④ Confirm input.

When completed setting the data, press  .

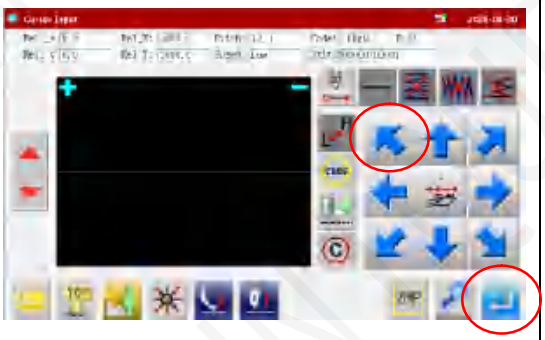
4. The arrow input screen will open.

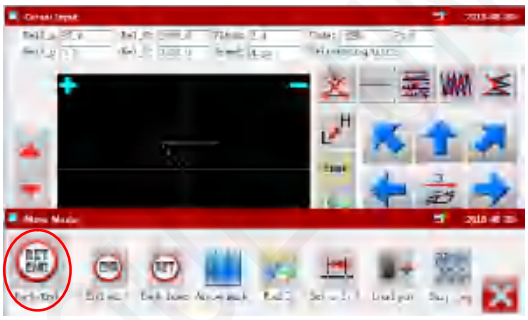
When this screen is first opened, the code is set to FEED (feed data).

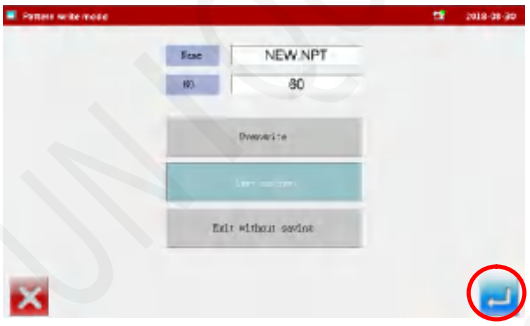
Press  and move to the position (A point) for starting stitching. (Movement using the arrow mark icons will change the X and Y position values displayed on the screen.)

After moving, press  , and set the current position. (Data on feed data to point A will be created.)

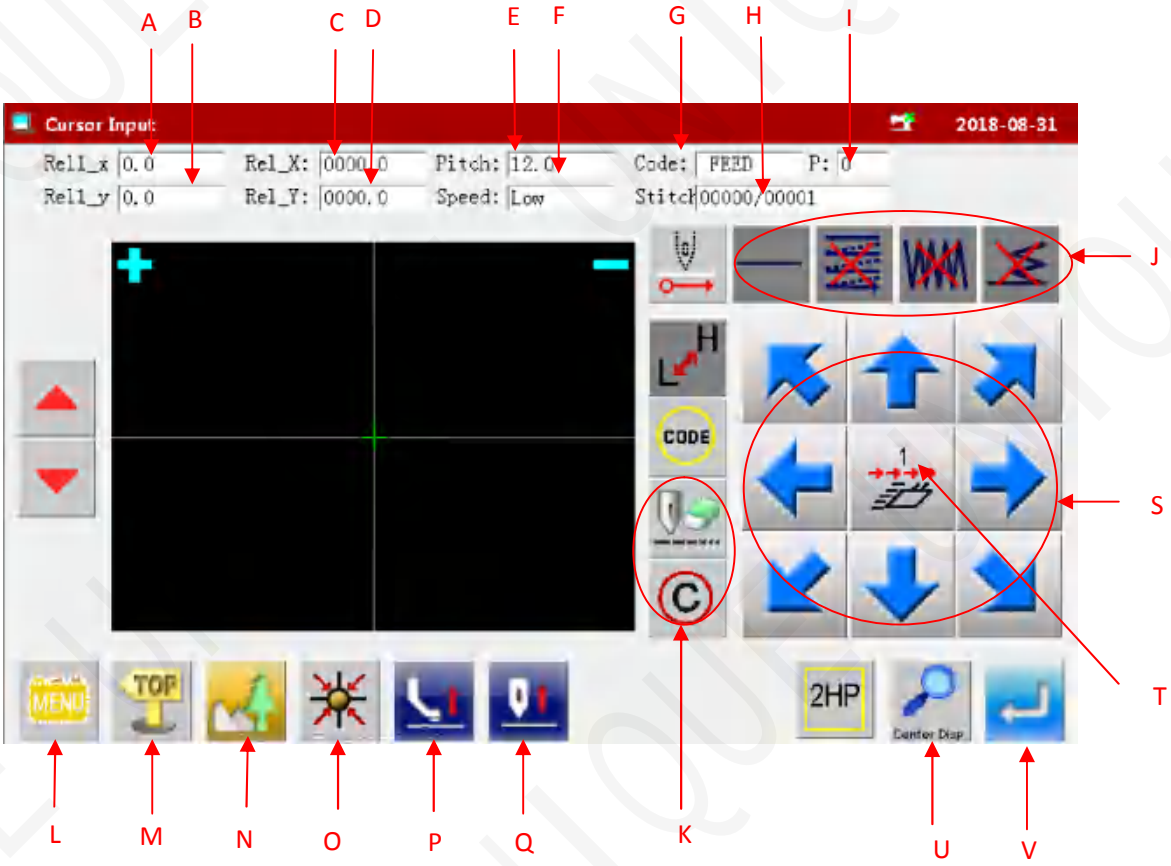
【Memo】Only stitch at the end of pattern, it can proceed for new input. So, If stitch not at the end of pattern after stitch move, direction key can not be used. Only move stitch to the end of pattern again, it will continue input.



5. Next press  , the code is set to SEW (sewing), so press  and move to the position (B point) for ending stitching. After moving, press  , and set the current position. (Data on straight stitching to point B will be created.) Next, press  .	
6. Inputting the return/end code. Press  (Data on feed data to the home position and the end code will be created.) **【Caution】** The work holder will automatically return to the home position. Take care when the needle is lowered, etc.	
7. A prompt for home position return will appear. Press  .	

8. Select a saving method. After selecting the saving method, press icon.（We choice「Storage for the new file」for this example.）	 
9. The Standard screen will open. Return to the Standard screen and confirm the input data. This completes the input.	

Chapter two: Description of arrow input screen.

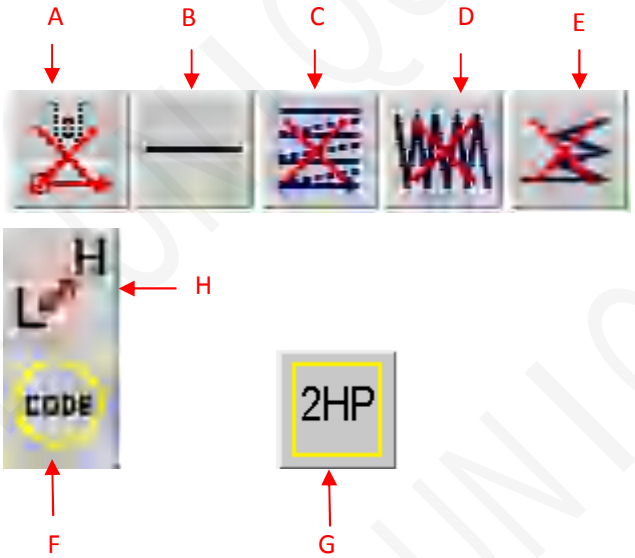


Function description：

Serial number	Function	Explanation
A	X absolute coordinate	The absolute coordinates of the current mobile X value.
B	Y absolute coordinate	The absolute coordinates of the current mobile Y value.
C	X relative coordinates	The relative coordinates of the current mobile X value.
D	Y relative coordinates	The relative coordinates of the current mobile Y value.
E	Stitch length	The setting stitch length is displayed. 【Memo】Empty to stitch length display 12.0mm.
F	Speed	The speed of stitch is displayed.
G	Code	The input code is displayed.
H	Number of stitches	Current stitching position is displayed.
I	Pattern points quantity	Edit pattern points quantity is display.
J	Input function	Detailed definition is in next form.
K	back	Go back
L	Menu	Enter the menu mode.
S	Direction button	Set moving direction

T	Clamp speed switch icon	: Normal : A little fast : Faster
M	TOP	BACK to before interface
N	Preview	Display the whole picture
O	Home	Move to Home position
P	PF move button	Make PF down or up
Q	Stitch move button	Make stitch down or up
U	Center display	Make the centrality of pattern on the display area centrality

2.1 Creation input function manual.

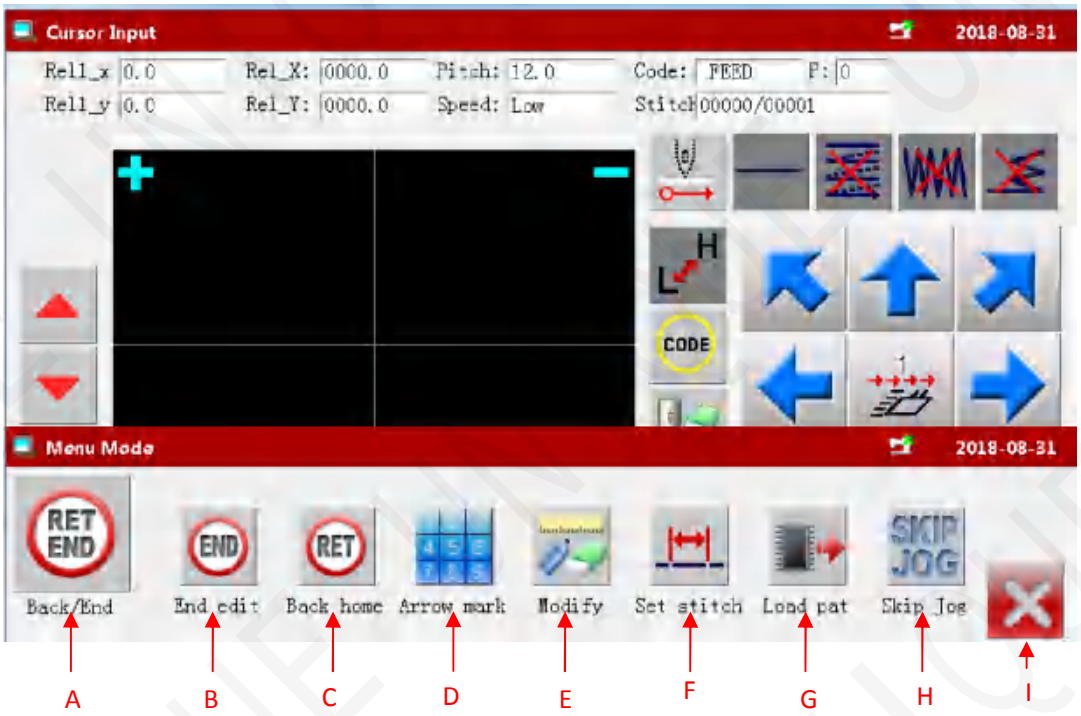


Function description:

Serial number	Function	Explanation
A	Feed key	To choose feed whether or not. : Feed : Feed cancel
B	Data entry method setting icon	The basic data entry method currently set will appear. (Point, straight line, broken line, circle, arc, curve) Press this icon to display the data entry method setting screen.
C	Multi-stitching,	The multi-stitching, reverse multi-stitching, and offset data currently

	reverse multi-stitching, offset data setting icon	set will appear. (Not set, multi-stitching (feed data mode), reverse multi-stitching (feed data mode), multi-stitching (sewing mode), reverse multi-stitching (sewing mode), offset) Press this icon to display the multi-stitching, reverse multi-stitching, offset data setting screen. Using this screen, you can set detailed data.
D	Zigzag setting icon	The zigzag currently set will be displayed (zigzag or non-zigzag). Press this icon to display the detailed zigzag data setting screen. Using this screen, you can set the detailed zigzag data.
E	back tacking setting icon	set sewing several stitches back at the first and ending point of pattern.
F	Code data input key	Press this icon to enter code data input screen.
G	2HP	Set current point as the second home position
H	Change sewing speed	Each time you press this icon, the set speed will be changed in the order of（HIGH→MD2→MD1→LOW→HIGH…）.

2.2 Description of menu.



Function description：

Serial number	Function	Explanation
A	Feed to home position and end code	The data on feed data from the current position to the home position and the end code will be created, and the system will exit from the input mode.
B	End code	The end code will be created, and the system will exit from the input mode.
C	Feed to home position	The data on feed data from the current position to the home position will be created.
D	Changing	To change the type number/direction. Default setting is direction

	number/direction	mode.
E	modification mode	You can enter the modification mode.
F	stitch length change	The stitch length change screen will appear.
G	Reading	When inputting data, the stitching data saved in the internal memory is added to the end of the data being input.
H	Skip jog setting	The skip jog setting screen will appear.
I	Exit	Exit the menu mode.

Chapter three: Methods of creating sewing data.

Basic Inputs：

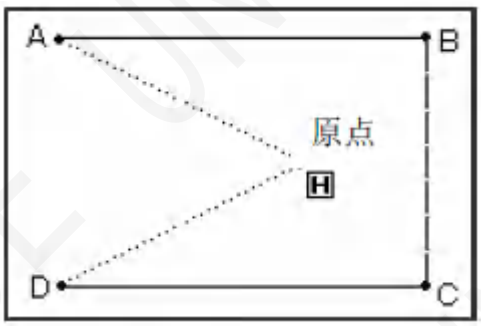
Function	Icon	Explanation
Linear		2-point input: A linear line is created between the current position (already input) and the newly input point.
Arc		3-point input: An arc, passing through the current position (already input) and two newly input points, is created.
Circle		3-point input: A circle, passing through the current position (already input) and two newly input points, is created.
Curve		A curve passing through the current position (already input) and the input point (up to 2000 points possible) is created.
Broken line		A broken line connecting the current position (already input) and the input point (up to 2000 points possible) is created.
Point		The point can be input one stitch at a time.
Code		The code by which various controls are done can be input.

3.1 Linear input

Operation points:

- Designate linear input .
- Input two points (A linear line is created between the current position (already input) and the newly input point.)

【Example】The following type of sewing data will be created.



Operation details:

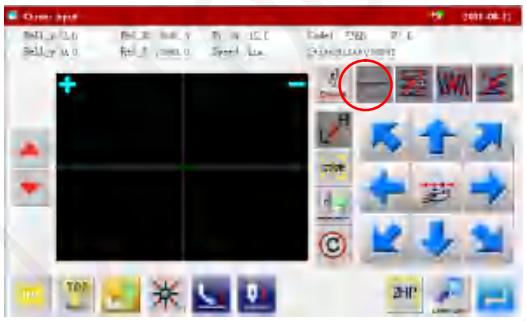
1. Inputting feed data to A point

Press  and 

① On the Standard screen. After making the various settings on the Data Setting Input screen, the Arrow Input screen will open. （Refer to【Chapter one: low of data creation】）

②Check that the code is set to FEED. If different code is set, press  and set the code to FEED.

③Press the arrow icons and move to the A point. (Feed data to A point.)0



2. Setting feed data to A point

①The movement amount can be confirmed.
【Example】X：-20.0，Y：+10.0

②Press  to set the data. (Data on feed data to point A will be created.)

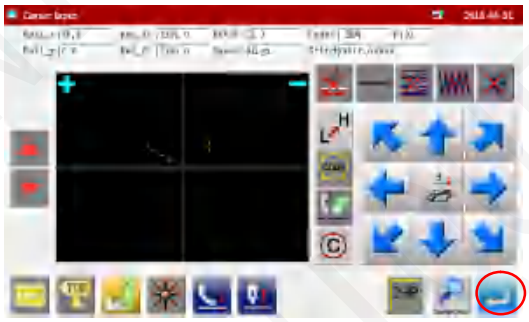
③The movement amount will be cleared.
X：+0.0，Y：+0.0

3. Inputting stitching to B point

① Press  the code is set to SEW (sewing)

② Press the arrow icons and move to the B point.

③ Press  to set the data. (Data on straight stitching to point B will be created.)



4. Inputting stitching from C point to D point

①Press the arrow icons and move to the C point.

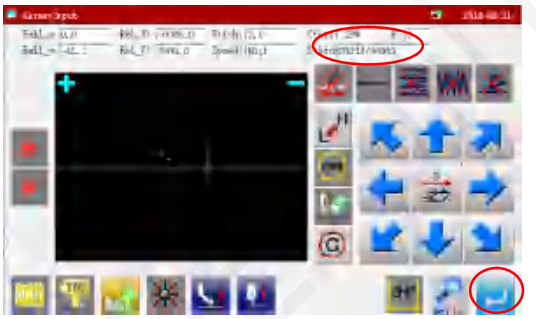
② Press  to set the data. (Data on straight stitching to point C will be created.)

5. Setting stitching to D point.

①Press the arrow icons and move to the D point.

② Press  to set the data. (Data on straight stitching to point D will be created.)

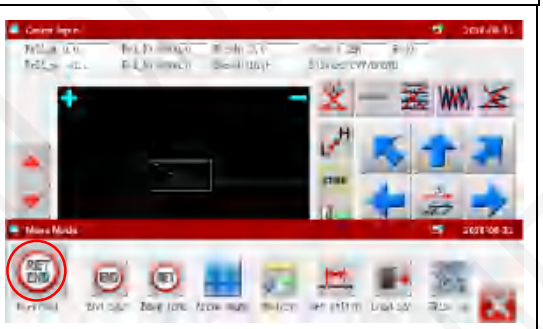
③ Press  .



6. Inputting the return/end code

① Press  (Data on feed data to the home position and the end Code will be created.)

②A prompt for home position return will appear. Press  .



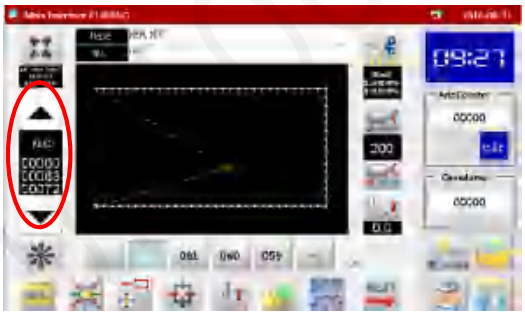
7. Select a saving method

①After selecting the saving method, press  icon.

②Return to the standard screen.

8. Confirming the data

Confirm the data. Press the jog icons ( ) so the sewing machine movement can be confirmed. (Even if the data input has not been completed, if the data input last has been set, the movement can be confirmed in the same manner.)

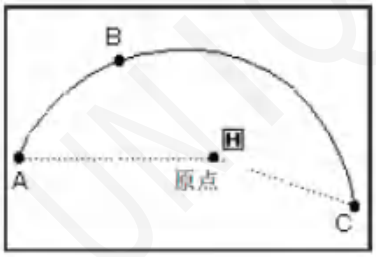


3.2 Arc input

Operation points:

- Designate arc input .
- Input three points (An arc, passing through the current position (already input and two newly input points, is created.)

【Example】The following type of sewing data will be created.

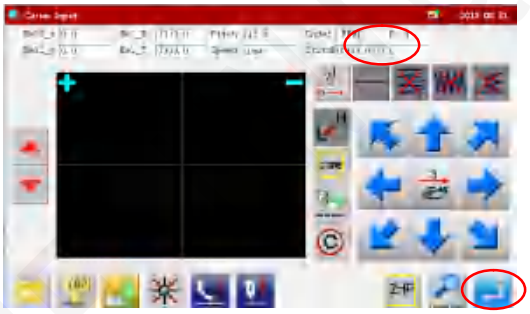


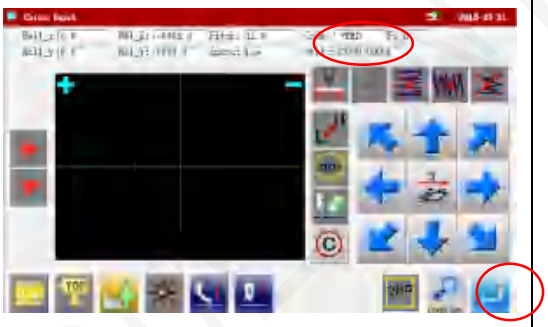
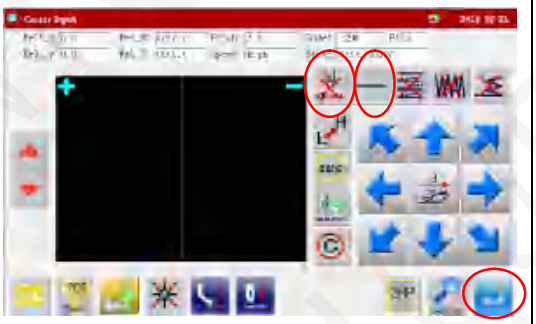
Operation details:

1. Inputting feed data to A point

①Press and on the Standard screen. After making the various settings on the Data Setting Input screen, the Arrow Input screen will open.（Refer to 【Chapter one: low of data creation】）

②Check that the code is set to FEED. If different code is set, press and set the code to FEED.



③Press the arrow icons and move to the A point. (Feed data to A point.)	
2. Setting feed data to A point ①The movement amount can be confirmed. ②Press  to set the data. (Data on feed data to point A will be created.	
3. Changing the input method ①The movement amount will be cleared. ②Press  the code will change to "SEW". ③If the stitching type is not  "ARC INPUT", (if the type is "LINEAR INPUT"), press and change the type. (The currently set stitching type will be displayed on the icon.)	

4. Designating arc input

① Press  and then press  .

②The system will return to the arrow input screen.

5. Setting B point and C point

①Press the arrow mark icon to move to point B.

②The movement amount can be confirmed.

③ Press  To determine point B.

④Press the arrow mark icon to move to point C.

⑤ Press  and set the arc input.

6. Creating the arc input data ①The confirmation message "Create arc" will appear. ② Press  to return to the point C data entry screen. ③ Press  and start creation of the arc input data.	
7. Completing creation of the arc input data Press  .	
8. Inputting the return/end code ① Press  . Data on feed data to the home position and the end code will be created. ②A prompt for home position return will appear. Press  .	

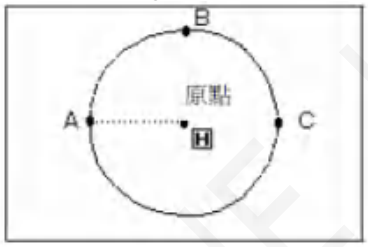
9. Select a saving method. ①After selecting the saving method, press  icon. ②Return to the standard screen.	
10. Confirming the data  Confirm the data. Press the jog icons ( ) so the sewing machine movement can be confirmed. (Even if the data input has not been completed, if the data input last has been set, the movement can be confirmed in the same manner.)	

3.3 Circle input

Operation points：

- Designate circle input. 
- Input three points (A circle, passing through the current position (already input) and two newly input points, is created.)

【Example】The following type of sewing data will be created.



【Caution】Note that the work holder will go back to the circle start position after the data is created.

Operation details:

1. Inputting feed data to A point

① Press  and 
On the Standard screen. After making the various settings on the Data Setting Input screen, the Arrow Input screen will open.（Refer to【Chapter one: low of data creation】）
②Check that the code is set to FEED. If different code is set, press  and set the code to FEED.
③Press the arrow icons and move to the A point. (Feed data to A point.)

2. Setting feed data to A point

①The movement amount can be confirmed.

② Press  to set the data. (Data on feed data to point A will be created.)

③n this case, press 
The icon to change the stitching type to "Circle input", press the input method setting icon  .

3. Designating circle input

① Press  . Press  and set the data.

②The system will return to the arrow input screen.

4. Setting B point and C point

①Using the arrow icons, move to the B point.

②The movement amount can be confirmed.

③ Press  to determine point B.

④The Arrow Input screen will reappear, so press the arrow icons and move to the C point.

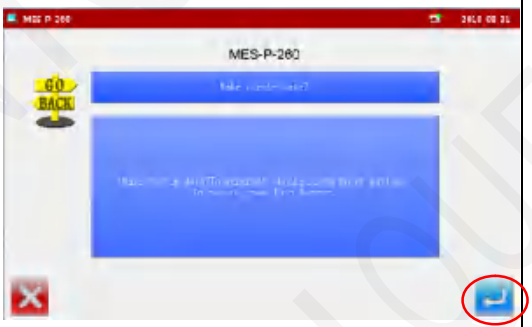
⑤ Press  to determine point C.

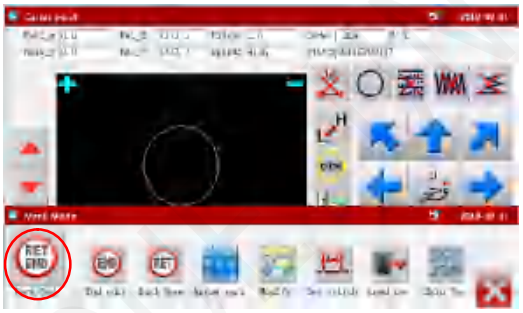
5. Creating the circle input data

①The confirmation message "Create circle" will appear.

②Press  to return to the point C data entry panel.

③ Press  and start creation of the circle input data.



6. Completing circle input Press  .	
7. Inputting the return/end code  ① Press . (Data on feed data to the home position and the end code will be created.) ②A prompt for home position return will appear. Press  .	
8. Select a saving method ①After selecting the saving method, press  icon. ②Return to the standard screen.	

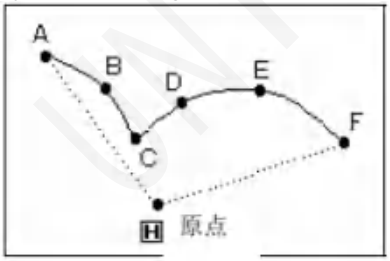
9. Confirming the data  Confirm the data. Press the jog icons ( ) so the sewing machine movement can be confirmed. (Even if the data input has not been completed, if the data input last has been set, the movement can be confirmed in the same manner.)	

3.4 Curve input

Operation points:

- Designate curve input
- **A curve, passing through the current position and the input points, is created.**
- A delimiter point can be inserted at a pointed corner to continuously input the curve.

【Example】The following type of sewing data will be created.

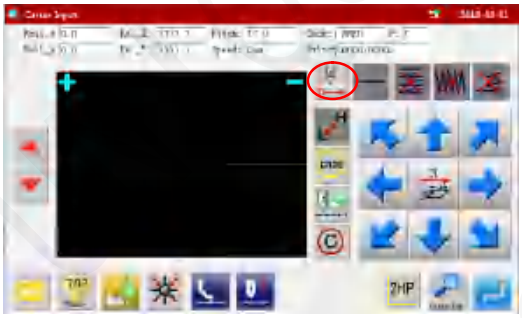


【Memo】A delimiter is set at the C point.

Operation details:

1. Inputting feed data to A point

① Press  and 
On the Standard screen. After making the various settings on the Data Setting Input screen, the Arrow Input screen will open. （Refer to 【Chapter one: low of data creation】）
②Check that the code is set to FEED. If different code is set, press  and set the code to FEED.
③Press the arrow icons and move to the A point. (Feed data to A point.)

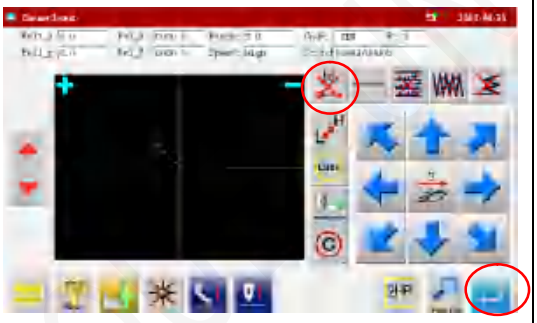


2. Setting feed data to A point

①The movement amount can be confirmed.

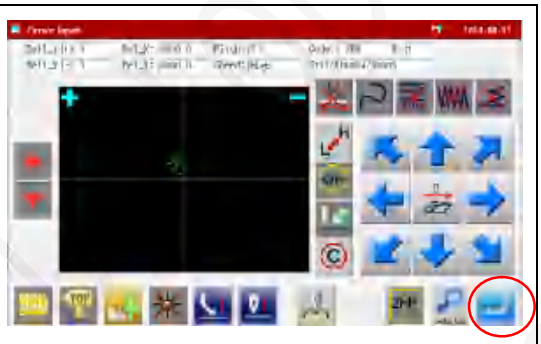
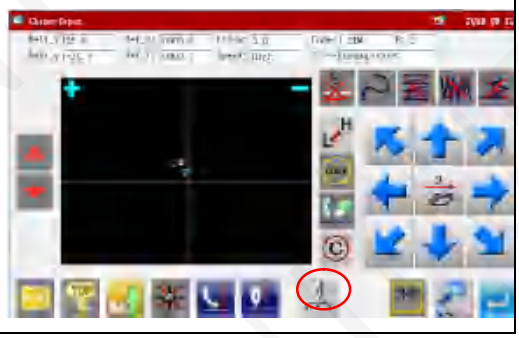
② Press 
To set the data. (Data on feed data to point A will be created.)

③Press  , the code will set to SEW (sewing).To change the stitching type to "CURVE INPUT", Press the input method setting icon. 



3. Designating curve input

① Press  .Press  and set the data.
②The system will return to the arrow input screen.

4. Setting B point ①Press the arrow mark icon to move to point B. ② Press  to determine point B.	
5. Setting C point ①Press the arrow mark icon to move to point C. ② Press  to determine point C. ③ Press  again to enter the breakpoint.	
6 Press  . The breakpoint will be set here.	

7. Setting the D point, E point and F point, and setting the curve input.

①The Arrow Input screen will reappear.

②Press the arrow icons, and move to the D point.

③ Press  to determine point D.

④Press the arrow icons again, and move to the E point.

⑤ Press  to determine point E.

⑥Press the arrow icons again, and move to the F point.

⑦ Press  to determine point F.

⑧At the completion of all point data entry, press  again to create data.

8. Creating the curve input

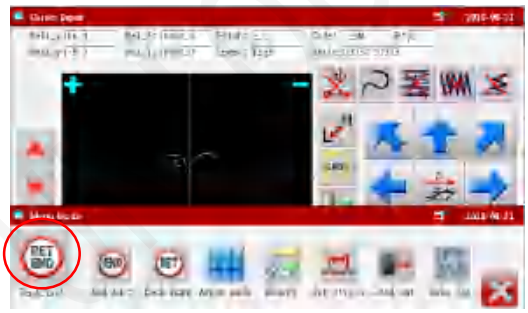
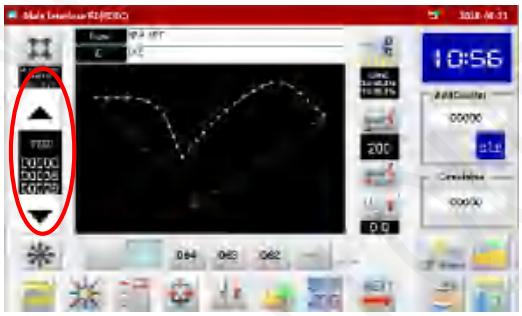
①The data creation confirmation message "Make spline data" will appear.

② Press  to return to the last point input screen.

③ Press  to start creation of the curve input data.

9.Completing curve input creation

Press  .

10. Inputting the return/end code ① Press  . Data on feed data to the home position and the end code will be created. ②A prompt for home position return will appear. Press  .	
11. Select a saving method ①After selecting the saving method, press  icon. ②Return to the standard screen.	
12. Confirming the data  Confirm the data. Press the jog icons ( ) so the sewing machine movement can be confirmed. (Even if the data input has not been completed, if the data input last has been set, the movement can be confirmed in the same manner.)	

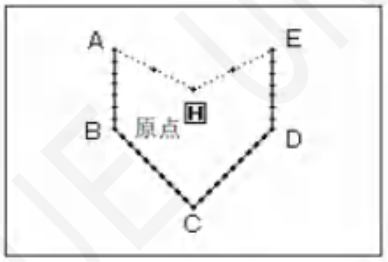
【Memo】When you edit free curve, to improve precision of the curve.

3.5 Broken line input

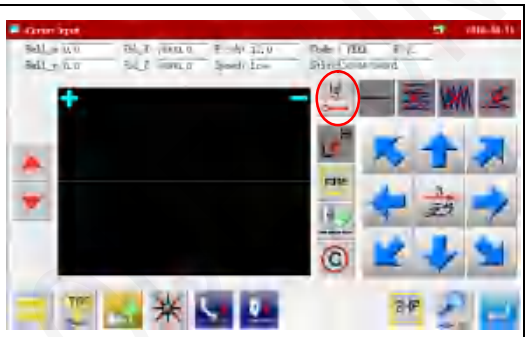
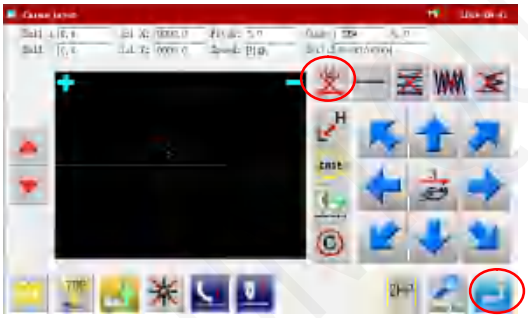
Operation points：

- Designate broken line input 
- (A broken line connecting the current position and input points is created.

【Example】The following type of sewing data will be created.

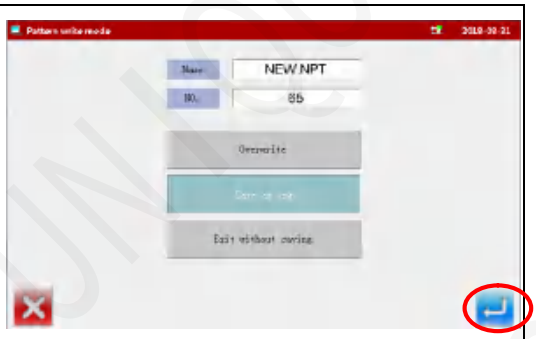


Operation details：

1.) Inputting feed data to A point. ① Press  and  On the Standard screen. After making the various settings on the Data Setting Input screen, the Arrow Input screen will open. （Refer to【Chapter one: low of data creation.】） ②Check that the code is set to FEED. If different code is set, press  and set the code to FEED. ③Press the arrow icons and move to the A point. (Feed data to A point.)	
2. Setting feed data to A point ①The movement amount can be confirmed ② Press  To set the data. (Data on feed data to point A will be created.) ③Press  ,the code will set to SEW (sewing).To change the stitching type to "Broken line input", press the input method setting icon.  .	

3. Designating broken line input ① Press  . Press  and set the data. ②The system will return to the arrow input screen.	
4. Setting B point , C point , D point , E point ①Press the arrow mark icon to move to point B. ② Press  to determine point B. ③Press the arrow mark icon to move to point C. ④ Press  to determine point C ⑤Press the arrow mark icon to move to point D. ⑥ Press  to determine point D ⑦Press the arrow mark icon to move to point E ⑧ Press  to determine point E ⑨At the completion of all point data entry, press  Again to create data.	

5. Creating the broken line input ①he data creation confirmation message "Create breakpoint data" will appear. ② Press  to return to the last point input screen. ③ Press  to start creation of the broken line input data.	
6. Creating the broken line input Press  .	
7. Inputting the return/end code. ① Press  Data on feed data to the home position and the end code will be created. ②A prompt for home position return will appear. Press  .	

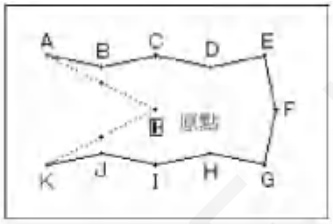
8. Select a saving method ①After selecting the saving method, press  icon. ②Return to the standard screen.	
9. Confirming the data  Confirm the data. Press the jog icons ( ) so the sewing machine movement can be confirmed. (Even if the data input has not been completed, if the data input last has been set, the movement can be confirmed in the same manner.)	

3.6 Point input

Operation points:

- Designate point input
- The distance between the points must be within 12.7mm

【Example】The following type of sewing data will be created.



Operation details:

1. Inputting feed data to A point

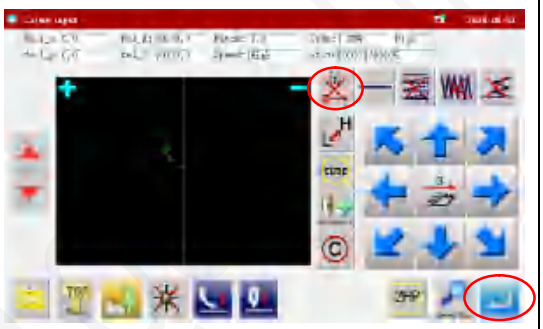
① Press  and 
On the Standard screen. After making the various settings on the Data Setting Input screen, the Arrow Input screen will open. （Refer to【Chapter one: low of data creation】）
②Check that the code is set to FEED. If different code is set, press  and set the code to FEED.
③Press the arrow icons and move to the A point. (Feed data to A point.)

2. Setting feed data to A point

①The movement amount can be confirmed.

② Press  to set the data. (Data on feed data to point A will be created.)

③Press  , the code will set to SEW (sewing).To change the stitching type to "POINT INPUT", press the input method setting icon.  .



3. Designating point input

① Press  . Press  and set the data.

②The system will return to the arrow input screen.

4. Setting B point to K point

①Press the arrow mark icon to move to point B.

【Memo】The distance between the points must be within 12.7mm.

② Press  to determine point B.

③Press the arrow mark icon to move to point C.

④ Press  to determine point C.

⑤The Arrow Input screen will reappear, so press the arrow icons and move to the D point to K point in the same manner.

5. Completing Operation points

Press  .

6. Inputting the return/end code

① Press  . Data on feed data to the home position and the end code will be created.)

②A prompt for home position return will appear. Press  .

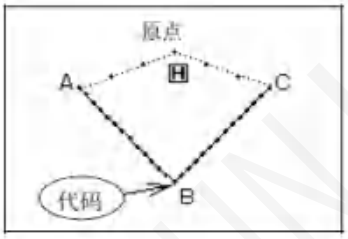
7. Select a saving method. ①After selecting the saving method, press  icon. ②Return to the standard screen.	
8. Confirming the data  Confirm the data. Press the jog icons ( ) so the sewing machine movement can be confirmed. (Even if the data input has not been completed, if the data input last has been set, the movement can be confirmed in the same manner.)	

3.7 Code data input

Operation points：

- Designate code data input  .
- Select and input the code data from the code data list.

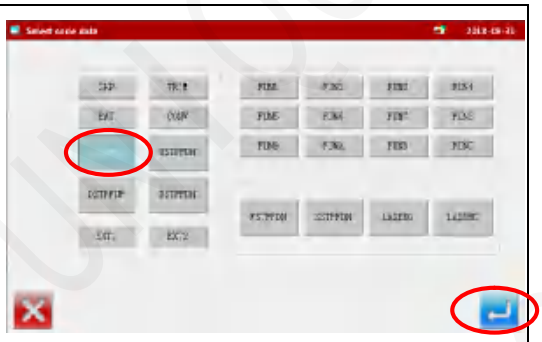
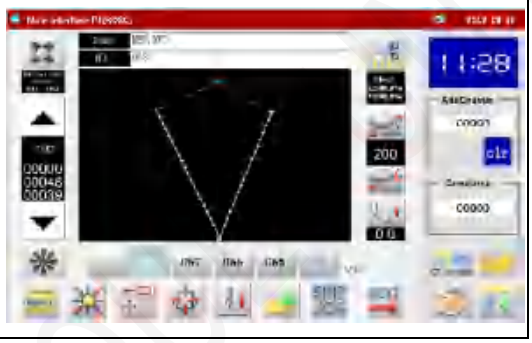
【Example】The following type of sewing data will be created. Input the "NEEDLE UP HALT" code at the B point between the A-B point linear line and B-C linear line.



【Memo】Function code can only be inputted at the end of pattern. It can be inserted modification mode.

Operation details:

1. Inputting a linear line from A point to B point Input a linear line from the A point to B point using the linear input procedures.	
2. Inputting the code data (NEEDLE UP HALT) Press  .	

① Press USTPFUP. ② Press to set the code. ③The system will return to the arrow input screen.	
3. Inputting a linear line from B point to C point. Input a linear line from the B point to C point using the linear input procedures. **4.** Inputting the return end and the data completion The return end is input and it is completion.	

List of code data：

Function	Function	Function	Function
2nd home position	Function code1	Function code7	Function code D
Needle UP halt	Function code2	Function code8	Function code E
Needle DOWN halt	Function code3	Function code9	Function code F
Thread trimming	Function code4	Function code A	Function code G
BAT	Function code5	Function code B	Output 1~16H
Inversion presser foot	Function code6	Function code C	Output 1~16L

Chapter four: Application inputs

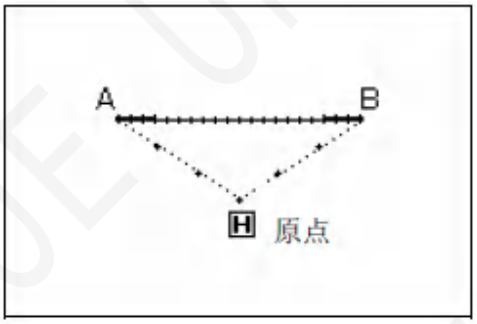
Various types of stitching, including back tacking, multiple stitching, offset stitching and zigzag stitching can be carried out. Various types of stitching data can be created by combining the basic inputs and these types.

Function	Icon
Multiple stitching	: Multiple stitching (Feed data specifications) : Multiple stitching (stitching specifications) : Reverse multiple stitching (Feed data specifications) : Reverse multiple stitching (stitching specifications)
Offset stitching	
Zigzag stitching	

【**Note**】That the application inputs cannot be combined with point inputs to input data.

4.1 Back tacking (start/end back tacking)

【Example】The following type of sewing data will be created. With the linear input, the N mode and 3-stitch back tacking will be inserted for both the start and end of stitching.



Operation details:

1. Setting the input method

①Set the feed data from the home position to the A point with the procedures for linear input, and open the Input Method Setting screen.

②Press Linear Input .

③Press back tacking .

④Press the back tacking details setting icon .

2. Setting the back tacking details

① The details are set on this screen. The details set here are, (start/end back tacking).

②Start mode (N mode), three start stitches.

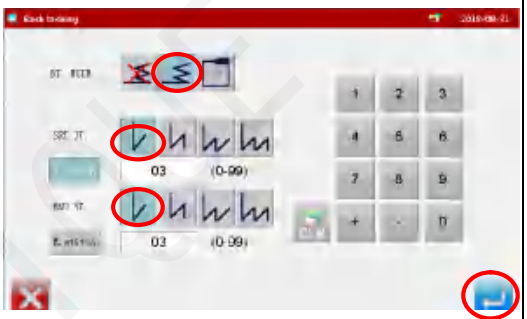
③End mode (N mode), three end stitches. Press to determine these set values.

④The system will return to the input method setting screen

⑤ Press to determine the set values.

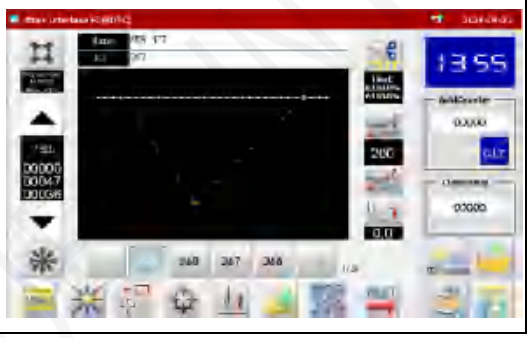
⑥The system will return to the arrow input screen.

⑦Determine the B point with the linear input procedures, and create a linear line. After creating the linear line, press .



3. Confirming the data

The start/end back tacking data for the linear line has been created.



Regarding back tacking mode：

 V mode: Back tacking will be performed only once.

 N mode: Back tacking will be performed twice.

 M mode: Back tacking will be performed third.

 W mode: Back tacking will be performed fourth.

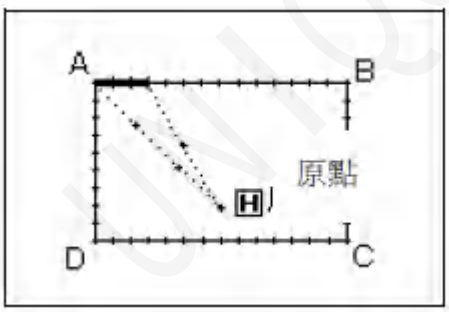
Regarding number of stitches：

After press「Start mode」or「End mode」,the input box will have cursor blinks, then use numeric keypad to input.

【**Memo**】Press the back tacking data setting icon on the arrow input screen to directly display the detailed back tacking data setting" screen.

4.2 Back tacking (overlap back tacking)

【Example】The following type of sewing data will be created. Input a rectangle as a broken line, and then insert overlap back tacking at the end. (The overlap mode is entered once; three overlap stitches are made.) (The bold section is the overlap back tacking section.)



【Memo】It is a shutting figure in the figure made in [Broken line], [Circle], [Curve] to be able to do multiple back tacking. That is, it is not possible to do by combining "Straight line" in the plural in the enclosed figure. Moreover, it is not possible to do by plural combining "Straight line" and "Curve" also even in the enclosed figure. The multiple back tacking can be made only by 1 place per 1 "Sewing" data origination.

Operation details:

1. Setting the input method

①Set the feed data from the home position to the A point with the procedures for broken line input, and open the Input Method Setting screen.

②Press broken line Input .

③Press Overlap back tacking .

④Press the back tacking details setting icon .

2. Setting the back tacking details

①The details are set on this screen. The details set here are, (overlap back tacking), overlap mode , three overlap stitches.

② Press to determine these set values.

③The system will return to the input method setting screen.

④ Press to determine the set values.

⑤The system will return to the arrow input screen.

⑥Determine the B, C, D and A points with the broken line procedures, and create the broken line data. (A broken line having overlap back tacking will be created.)

⑦After creating the broken line data, input .

3. Confirming the data The overlap back tacking will be created with the rectangle made with broken lines.	

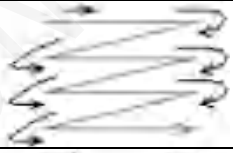
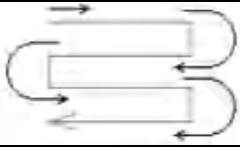
Overlap mode：

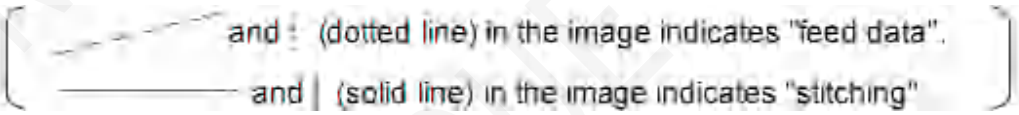
 ：overlap once  ：overlap twice  ：overlap three times  ：overlap four times

Overlap Number of stitches setting manual：

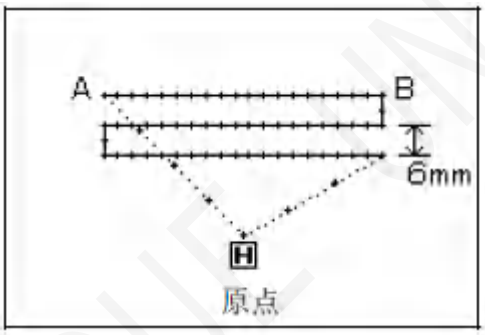
Numeric keypad can be used to input (Set a value between 0 and 99.)

4.3 Multiple stitching

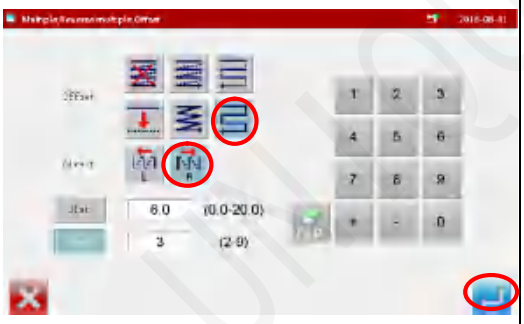
Type	Connection	icon	Stitching data image	Explanation
Multiple	Feed data			"Stitching" in a set direction is connected with "feed without stitching".
	Stitching			"Stitching" in a set direction is connected with "stitching".
Reverse multiple	Feed data			"Stitching" in alternating reverse directions is connected with "feed data".
	Stitching			"Stitching" in alternating reverse directions is connected with "stitching".



【Example】The following type of sewing data will be created. Create the linear reverse multiple (stitching specification) data. (The multiple distance is 6mm, the number of times is three, the direction is right.)



Operation details:

1. Setting the input method ① Set the feed data from the home position to the A point with the procedures for linear input, and open the Input Method Setting screen. ② Press Linear Input . ③Press Reverse Multiple (stitching specifications) . ④Press the reverse multiple details. Press .	
2. Setting the reverse multiple stitching details ①The details are set on this screen. Press and , and set the distance to 6.0, and the number of times to 3. ② Press to set the data. ③The system will return to the input method setting screen. ④ Press to set the data. ⑤The system will return to the arrow input screen. ⑥Determine the B point with the linear input procedures, and create a linear line. (A straight line having reverse multiple (stitching specification) will be created.) ⑦After creating the linear line, input .	

3. Confirming the data Linear reverse multiple data has been created.	

Direction：

When creating multiple stitching to the left of the input stitching line, press (left side).

When creating multiple stitching to the right of the input stitching line, press (right side).

Distance：

This is the distance between the multiple stitching and adjacent line. Set between 0.0mm and 20.0mm.After press「distance」,the input box will have cursor blinks, then use numeric keypad to input.

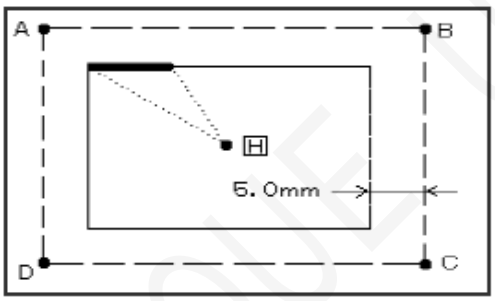
Number of times：

Set the number of multiple stitching layers. Set between 2 and 9.After press「number」,the input box will have cursor blinks, then use numeric keypad to input.

【Memo】Or press the MULTI, REVERSE MULTI, OFFSET icon on the arrow input screen to directly display the MULTI, REVERSE MULTI, OFFSET setting screen.

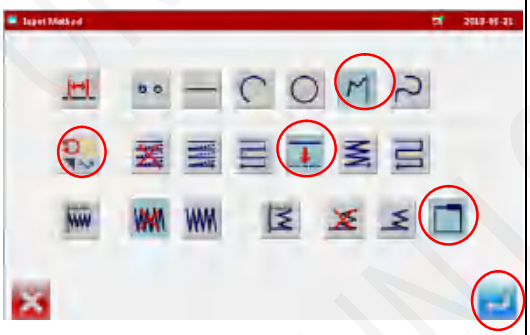
4.4 Offset stitching (with overlap back tacking)

【Example】The following type of sewing data will be created. Input offset stitching with overlap back tacking as a broken line. (Set the offset distance to "5.0 mm", direction to "right", overlap back tacking mode to "1", and number of stitches to "3".)



（ The bold section indicates the overlap back tacking section.）
（- - - - - - - The dotted line indicates the actual input line (position before offset.)）

Operation details:

1. Setting the input method ①Set the feed data from the home position H to the A point with the procedures for broken line input, and open the Input Method Setting screen. ②Press Broken Line Input . ③Press Offset . ④Press Overlap Back Tacking .	
2. Setting the offset details ①Set the application input details. Press . ②The details are set on this screen. Press and , and set the distance to 5.0. The offset amount can be set in 0.1mm increments between 0 and 12.7mm. ③After inputting the details, press to set the data.	
3. Setting the back tacking details After returning to the Input Method Setting screen, press the back tacking details setting icon .	

4. Setting the overlap back tacking details ①The details are set on this screen. The details set here are, (overlap back tacking) overlap mode , three overlap stitches. ② Press to set the data. ③The system will return to the input method setting screen. ④ Press to set the data. ⑤The system will return to the arrow input screen. ⑥Determine the B, C D and A points with the broken line procedures, and create the broken line data. ⑦After creating the broken line data, input .	
5. Confirming the data The offset data will be displayed on the image screen.	

Direction setting manual：

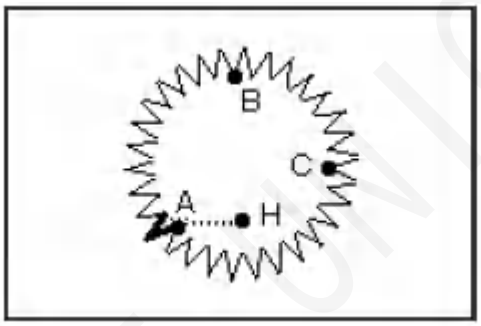
When move to the left of the input stitching line, press (left side)

When move to the right of the input stitching line, press (right side).

【Memo】Or press the MULTI, REVERSE MULTI, OFFSET icon on the arrow input screen to directly display the MULTI, REVERSE MULTI, OFFSET setting screen.

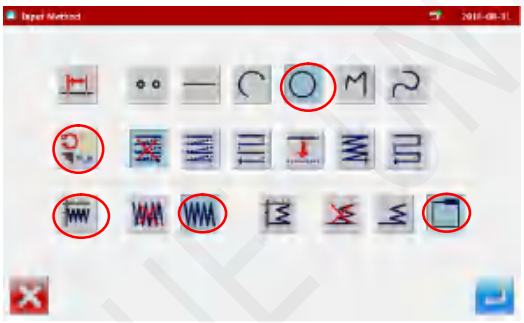
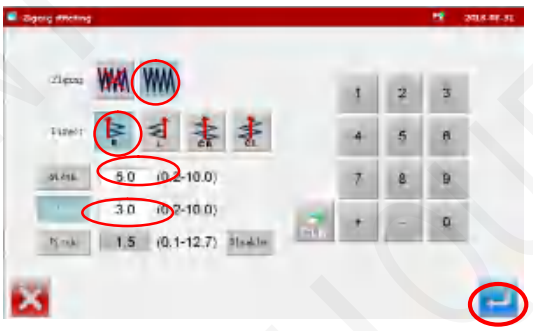
4.5 Zigzag stitching (with overlap back tacking)

【Example】The following type of sewing data will be created. Input zigzag stitching with overlap back tacking as circle. (The zigzag deflection width will be 5.0mm, the feed amount will be 3.0mm, the direction is left, the overlap back tacking mode will be carried out once, and three overlap stitches will be made.)



（The bold section is the overlap back tacking section.）

Operation details:

1. Setting the input method ①Set the feed data from the home position H to the A point with the procedures for broken line input, and open the Input Method Setting screen. ②Press Circle . ③Press Zigzag . ④Press Overlap Back Tacking . ⑤Set the zigzag details. Press .	
2. Setting the zigzag details ①The details are set on this screen. Press , set the deflection width to 5.0, feed amount to 3.0 and direction to "left" . ②After inputting the details, press to set the data.	

3. Setting the back tacking details

After returning to the Input Method Setting screen, press the back Tacking Details Setting icon  .

4. Setting the overlap back tacking details

①The details are set on this screen. The details set here are,  overlap mode,  three overlap stitches.

②After inputting the details, press  to set the data.

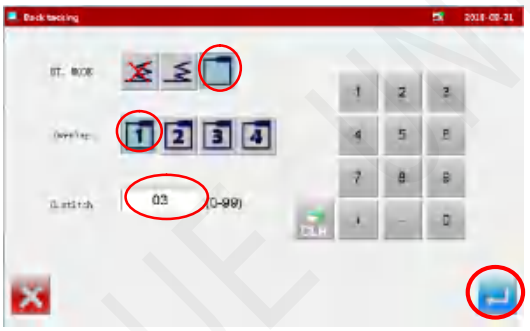
③The system will return to the input method setting screen.

④ Press  to determine the set values.

⑤The system will return to the input method setting screen.

⑥While following the circle data entry procedure, determine points B and C to create the circle data.

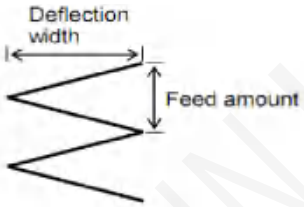
⑦After creating the circle data, press  .



5. Confirming the data

Zigzag stitching (with overlap back tacking)

Deflection width and feed amount:



After press「Deflection width」or「Feed amount」,the input box will have cursor blinks, then use numeric keypad to input.

Creation direction：

 ：Travel direction left side.

 ：Travel direction center Starts from left side.

 ：Travel direction center Starts from right side.

 ：Travel direction right side.

【Memo】Or press the ZIGZAG icon on the arrow input screen to directly display the ZIGZAG setting screen.

Chapter five: Table of stitching type combinations

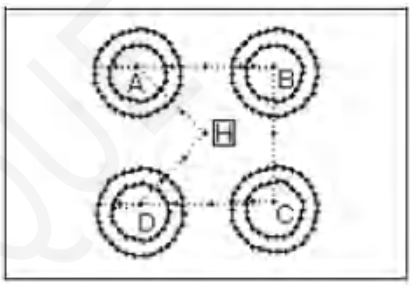
Basic input	Application input				
	Multiple	Offset	Zigzag	Start/end back tacking	Overlap back tacking
Linear	●				
		●			
			●		
				●	
					●
	●		●		
	●			●	
	●		●	●	
		●	●		
		●		●	
		●	●	●	
			●	●	
Arc	●				
		●			
				●	
					●
	●		●		
	●			●	
	●		●	●	
		●	●		
		●		●	
		●	●	●	
			●	●	
Circle	●				
		●			
			●		
				●	
					●
	●		●		
	●			●	
	●				●
	●		●	●	
	●		●		●
		●	●		
		●		●	
		●			●
Circle		●	●	●	
		●	●		●
			●	●	
			●		●
Curve	●				
		●			
			●		
				●	
					●
	●		●		
	●			●	
	●				●
	●		●	●	

	●		●		●
		●	●		
		●		●	
		●			●
		●	●	●	
		●	●		●
			●	●	
			●		●
Broken line	●				
		●			
			●		
				●	
					●
	●		●		
	●			●	
	●				●
	●		●	●	
	●		●		●
		●	●		
		●		●	
		●			●
		●	●	●	
		●	●		●
			●	●	
			●		●
Point	Combination inputs with application inputs are not possible.				

Chapter six: Call-up function

In the sewing data input mode, you can call up the sewing data from the internal memory, and can combine the called-up data with the currently-created data to create a new sewing data. You can determine whether the first and final feed data should be deleted.

【Example】To create the following sewing data, preliminarily create the double circle data  , and then use the feed data and call-up functions.



Operation details:

1. Creation of data on feed data from home position H to point A.	
2. Display of call-up screen ①Press the data entry mode  . ② Press  in the menu.	

3. Selection of call-up data
Select data to be called up, and then press .

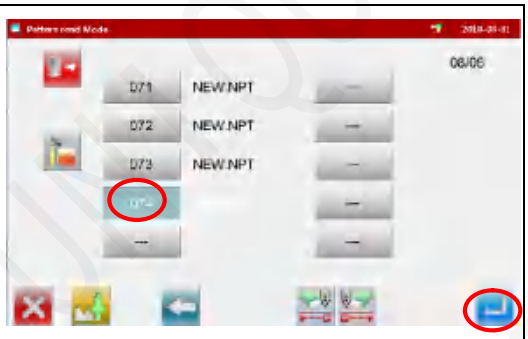
: The feed data at the sewing start point can be deleted.

: The feed data at the sewing end point can be deleted.

: The feed data at the sewing start point can be left undeleted.

: The feed data at the sewing end point can be left undeleted.

【Caution】The work holder will automatically move in accordance with the called-up data. If the needle is lowered, be careful not to get injured.



4. For B, C, and D, call up the data in the same way, and complete the data.

Chapter seven: Modification mode

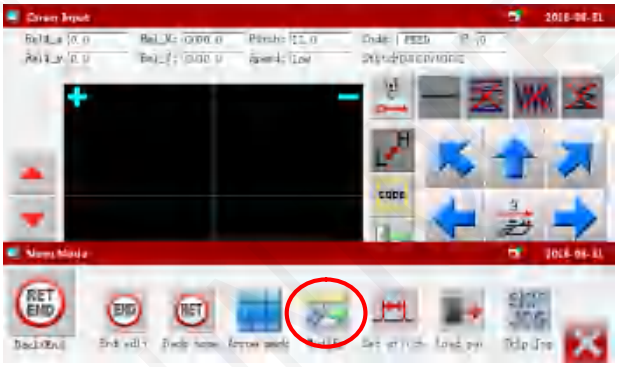
7.1 Main modification mode functions.

Function		icon	Details	Details setting
Stitch	Modifying the stitching start position		The stitching start position moves.	—
	Deleting a stitch		Deletes the designated stitch.	 Designated No. of Stitches  All After Designated Stitch
	Adding a stitch		Data for one stitch is added at designated position.	 One Stitch Addition  Same Stitch Addition
	Modifying the stitch position		The position of the stitch is modified.	< After modification position >  Fixed  Relative Movement
	Moving a block		Data in a designated range is moved.	< Prior/Subsequent data >  Change  Add new stitch in between
	Modifying a block		The area between two points to be modified is modified with linear, broken line, arc, curve, Zigzag or feed data.	—
	Modifying stitch length		The stitch length in the Designated range is modified.	 Designated distance modification  All After Designated Stitch
Modifying the stitching speed			The stitching speed is modified From the designated stitch.	 Designated No. of Stitches  All After Designated Stitch
Modifying code data			Code data is added to or deleted from designated stitch Position.	 Add  Delete

7.2 Entering the modification mode

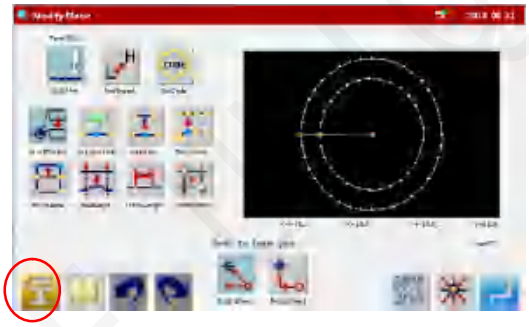
(1)Press and on the Standard screen to enter the modifiation mode.

（2）Press and in the input mode to enter the modification



7.3 Quitting the modification mode.

After making modifications, press to quit the modification mode.



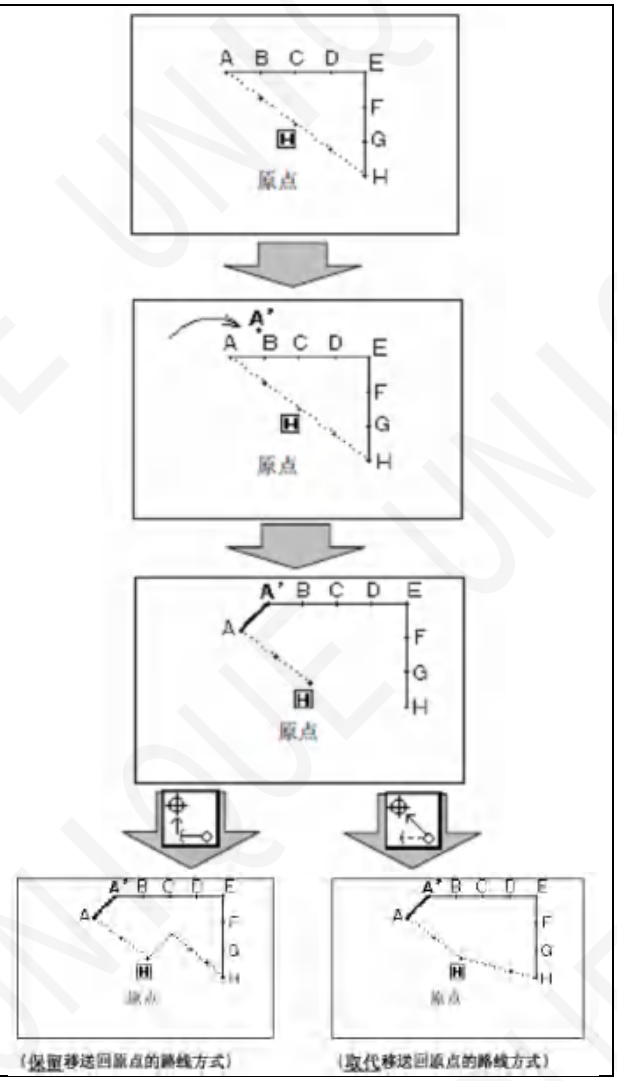
7.4 Changing the feed data to home position.

①An example for adding the A' point by adding one stitch to the original stitching data, as shown on the left, is explained in this section.

②Add the A' point as shown on the right.

③The B point to H point positions will change when the A' point is added. Thus, the feed data from the H point to the home position will also change. The method for changing this feed data can be selected with the following icons.

【Memo】Before modification, check the data. If the data on feed data from the sewing end point to the home position includes code data, the feed data following the code data will be modified.

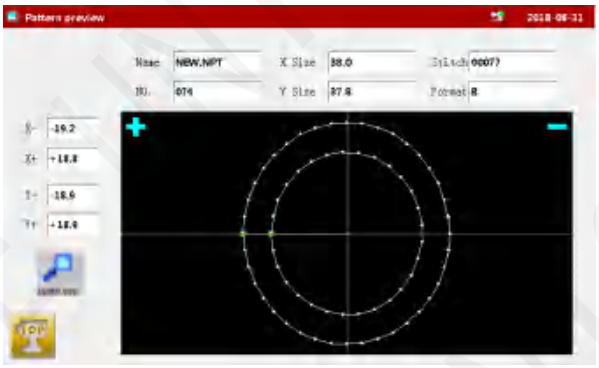
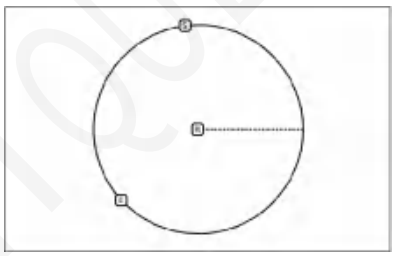
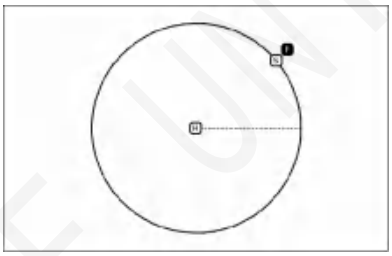


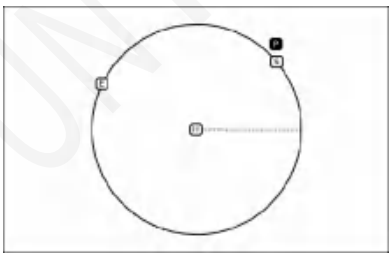
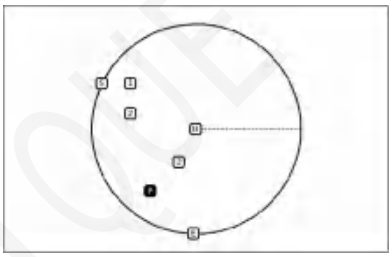
7.5 Confirming on the image screen

If the image display icon is pressed in the input mode, modification mode or conversion mode, the Image screen will open. This Image screen can be used effectively when modifying (converting) data in the modification (conversion mode), and the data can be modified (converted) easily.

An example of the Image screen in the modification mode is shown below.

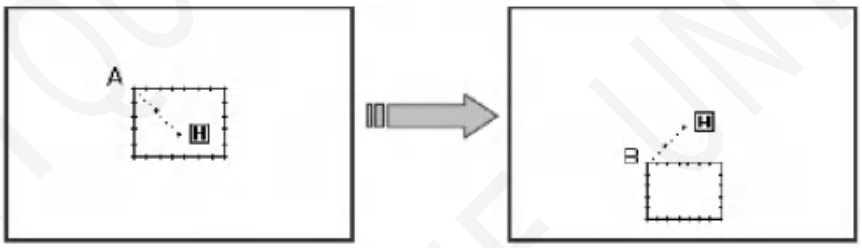
The Image screen can be confirmed after the data modification (conversion) mode is entered, regardless of before and after modifications made.

（1）When stitching start position is modified.  ：Closes the Image screen, and opens the previous screen. (Common for all Image screens.) H：Indicates the home position. (Common for all Image screens.) S：Indicates the original stitching start position. P：Indicates the modified stitching start position. (Current position moved to with the arrow icons.)	
（2）Deleting stitches H：Indicates the home position. (Common for all Image screens.) S：Indicates the stitch deletion start position. E：Indicates the stitch deletion end position.	
（3）Modifying the stitch position and adding stitches. H：Indicates the home position. (Common for all Image screens.) S：Indicates the original stitch position/stitch addition reference position. P：Indicates the modified stitch position/added stitch position. (Current position moved to with the arrow icons.)	

（4）Moving a block H：Indicates the home position. (Common for all Image screens.) S：Indicates the block movement start position. E：Indicates the block movement end position. P：Indicates the position after block movement modification.	
（5）Modifying a block H：Indicates the home position. (Common for all Image screens.) S：Indicates the block modification start position. E：Indicates the block modification end position. 1：Broken line transit point 1 2：Broken line transit point 2 3：Broken line transit point 3 P：Indicates the current position moved to with the arrow icons.	

7.6 Modifying the stitching start position

【Example】The stitching start position A point in the stitching data will be modified to the B point as shown below



Operation details：

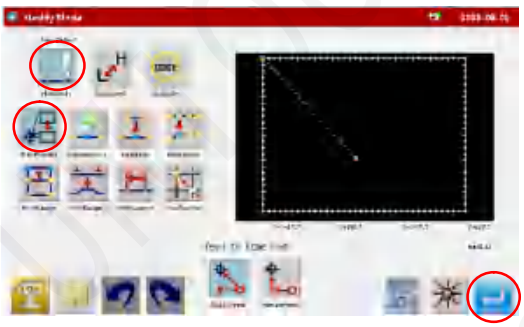
1. Selecting the stitching start position movement.

① Enter the modification mode.（Refer to【7.2 Entering the modification mode】）

②Press Stitch Data Change and Stitching Start Position Move.

③ Press to set the data.

【**Caution**】The work holder will automatically Move to the current stitching start position. Take care when the needle is lowered, etc.



2. Moving to the modification position and setting the data.

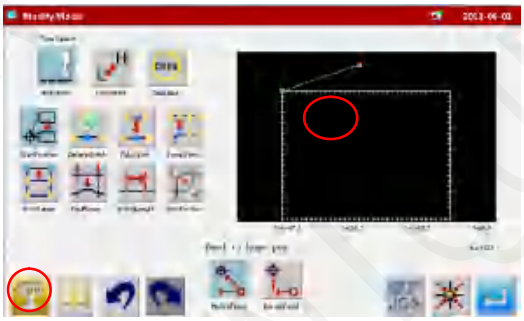
① Press the arrow icons to move the position to the B point.

② Press (The sewing start position will be modified.)

3. Confirming the modified data

① Quit the modification mode.

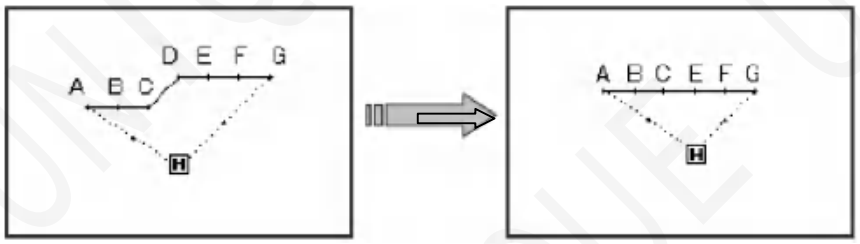
② Press to change to the Saving mode screen. Then return to the Standard screen after saving the data.（When is pressed, the modifications executed last will be undone.）



4. Confirming with the Standard screen The stitching start position has been modified.	

7.7 Deleting a stitch (Deleting the designated No. of stitches)

【Example】The stitching pattern between the C point and D point in the following type of stitching data will be deleted.



Operation details:

1. Selecting deletion of stitches ①Enter the modification mode.（Refer to【7.2 Entering the modification mode】） ②Press Stitch Data Change and Stitch Delete. ③Press to open the next screen.	

2. Determining the deletion method and the deletion range (start point)
①Using Jog v, determine the end point position (C point).

② Press  when the position has been set.

③Press  to delete designated No. of stitches

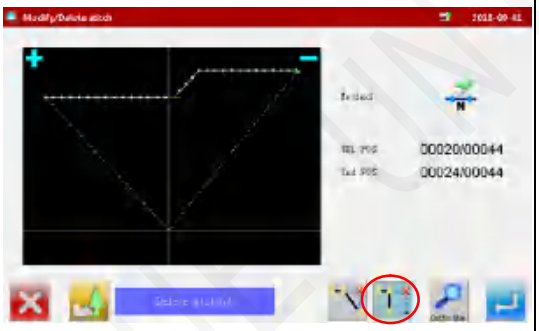
3. Delete the number of stitching

①Press 

③ Press  .

NOTE:  mean the deleted stitches replaced by feeding.

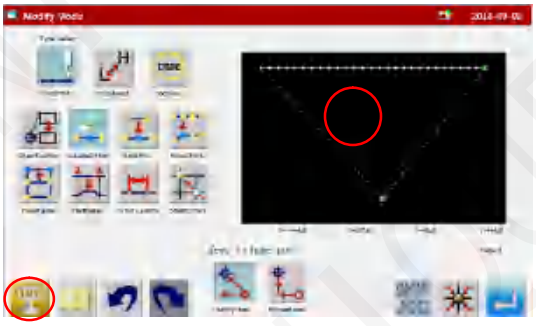
 mean connecting the start point and end poiont of the deleted stitches .



4. Confirming after stitch deletion

①Quit the modification mode.

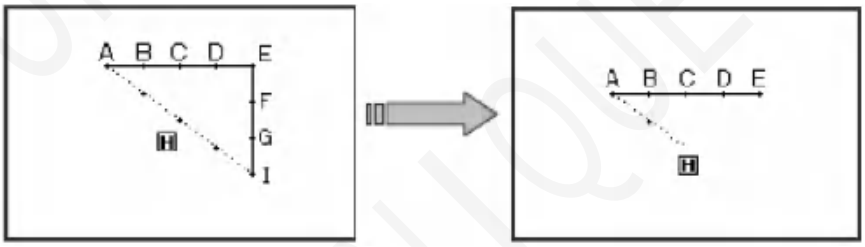
② Press  to change to the Saving mode screen. Then return to the Standard screen after saving the data.（When  is pressed, the modifications executed last will be undone.）



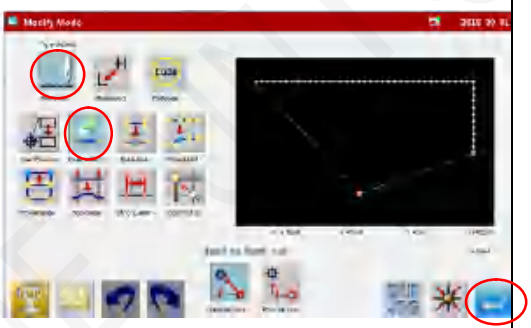
5. Confirming with the Standard screen The stitch has been deleted.	

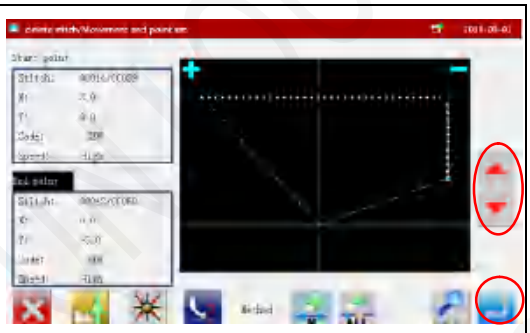
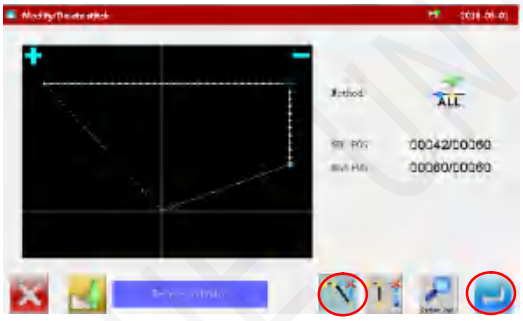
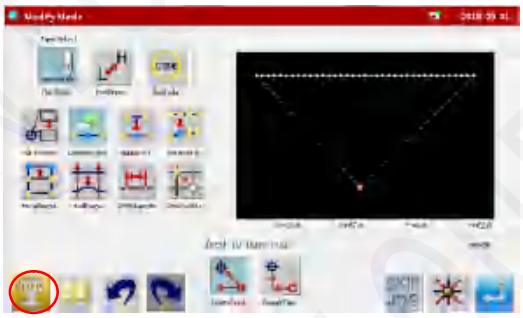
7.8 Deleting a stitch (Deleting all stitches after the designated position)

【Example】The stitching pattern after the E point in the following type of stitching data will be deleted.



Operation details：

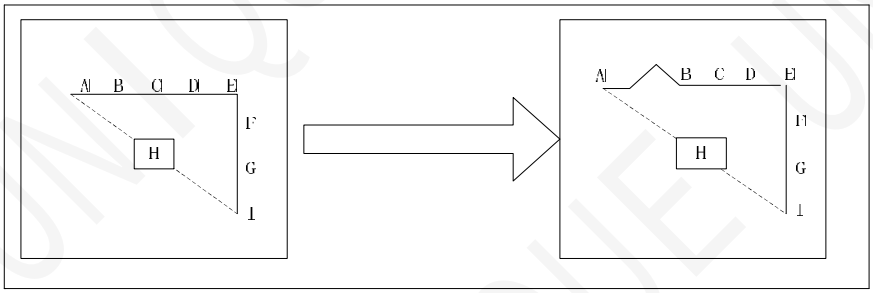
1. Selecting deletion of stitches ①Enter the modification mode.（Refer to 【7.2 Entering the modification mode】） ②Press Stitch Data Change and Stitch Delete. ③ Press to open the next screen.	

2. Determining the deletion method and the deletion range (start point) ①Using Jog  , determine the start point position (E point). ② Press  when the position has been set. ③ Press  to deleting all stitches after the designated position.	
3. Affirm the position of deleting ① Press  ② Press  .	
4. Confirming after stitch deletion ①Quit the modification mode. ②Press  to change to the Saving mode screen. Press  to return to the Standard screen after saving the data.	

5. Confirming with the Standard screen The stitches have been deleted.	

7.9 Adding a stitch (Adding one stitch)

【Example】The required stitch length A' will be added to the A point of the following type of stitching (The maximum stitch length is 12.7mm (between A and A').)



Operation details：

1. Selecting stitch addition ①Enter the modification mode（Refer to【7.2 Entering the modification mode】） ②Press Stitch Data Change and Stitch Add . ③ Press to open the next screen.	

2. Determining the addition position

①Using Jog  determine the position to be added. Move to the addition position (point A).

② Press  when the position has been set.

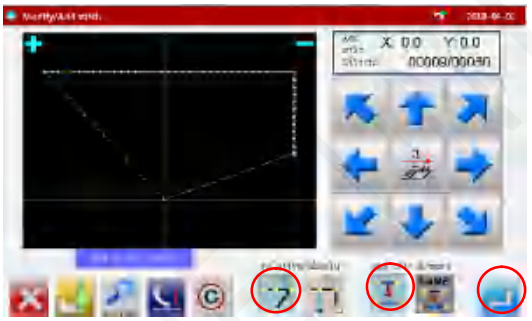
3. Setting the addition method

①Press One Stitch Addition  and then use the arrow icons to move and input the stitch position to be added. (A' point).

② Press 

③Press 

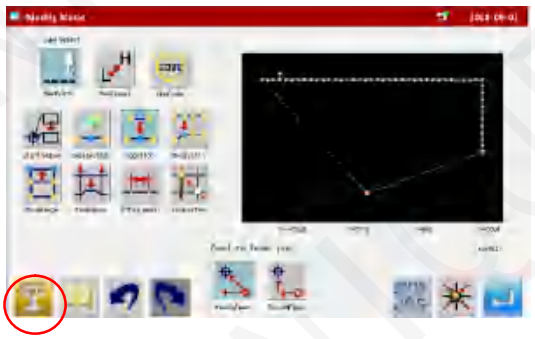
④Press  (One stitch will be added.)



4. Confirming after stitch addition

①Quit the modification mode.

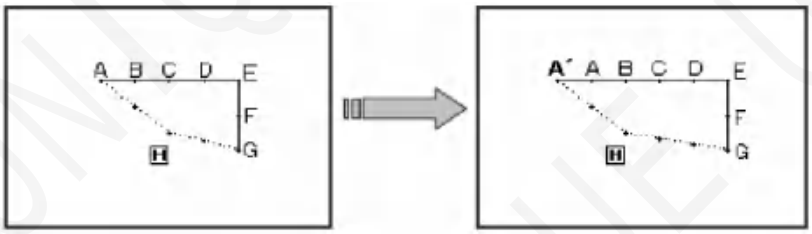
②Press  to change to the Saving mode screen. Press  to return to the Standard screen after saving the data.



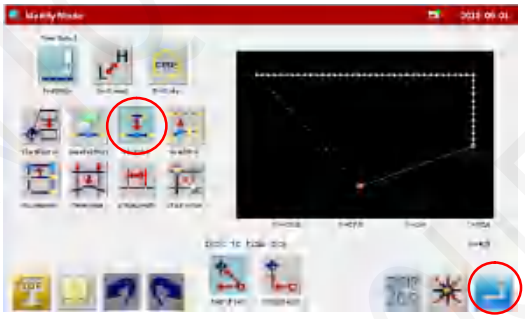
5. Confirming with the Standard screen One stitch has been added.	

7.10 Adding a stitch (Adding the same stitch)

【Example】The stitch A' point, the same as A, will be added to the A point of the following type of stitching data.



Operation details：

1. Selecting stitch addition ①Enter the modification mode（Refer to【7.2 Entering the modification mode】） ②Press Stitch Data Change  and Stitch Add  . ③ Press  to open the next screen.	

2. Determining the addition position

①Using Jog  determine the position to be added. Move to the addition position (point A).

② Press  when the position has been set.

3. Setting the addition method

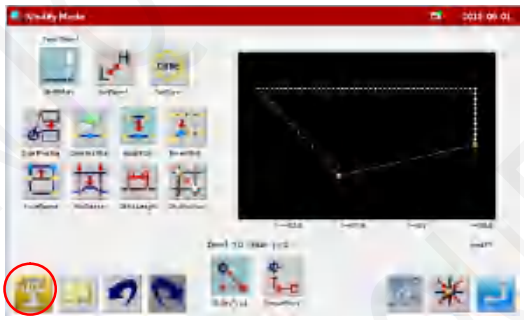
①Press  Same Stitch Addition 

②And then press  (The same stitch will be added.)
③Press set added stitches number.

4. Confirming after stitch addition

① Quit the modification mode.

②Press  to change to the Saving mode screen. Press  to return to the Standard screen after saving the data.

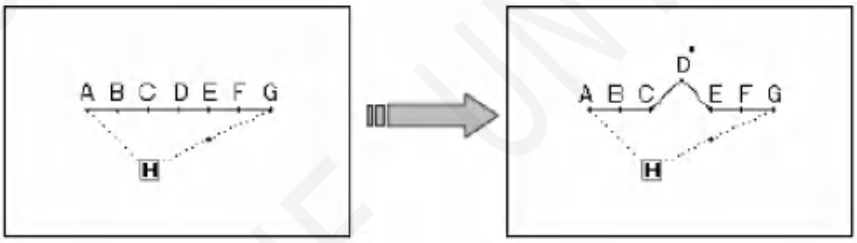


5. Confirming with the Standard screen

The same stitch has been added.

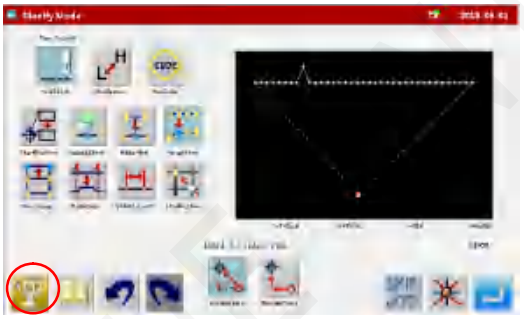
7.11 Modifying the stitch position (Position of subsequent data fixed)

【Example】The D point in the following type of stitching data will be moved.



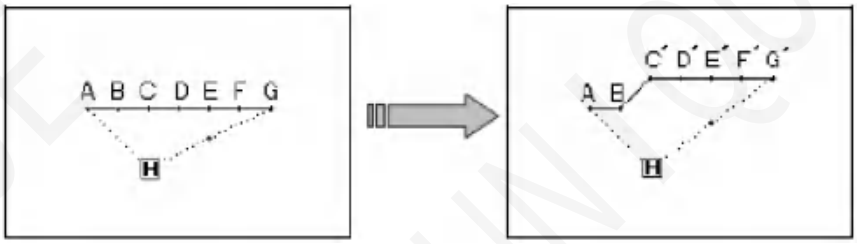
Operation details：

1. Selecting stitch position modification ①Enter the modification mode.（Refer to【7.2 Entering the modification mode】） ②Press Stitch Data Change and Stitch Position Modify. ③ Press to open the next screen.	
2. Determining the modification position ①Using Jog determine the position to be modified.(D point) ②Press when the position has been set.	

3. Setting the modification method and modification amount. ①To set the method, press  . (Pattern data after modification stitch fixed), and move to the modification position (point D') using the arrow mark icons. ② Press  The stitch position will be modified. 【Memo】Move the stitch length so that it is within the range of 12.7mm at the maximum.	
4. Confirming after modification ① Quit the modification mode. Press  to change to the Saving mode screen. Press  to return to the Standard screen after saving the data.	
5. Confirming with the Standard screen The stitch position has been modified.	

7.12 Modifying the stitch position (Subsequent data position moved)

【Example】The C point in the following type of stitching data will be moved. (The D, E, F and G points will move)



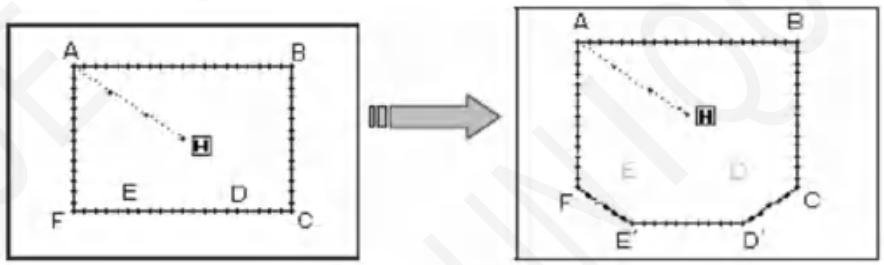
Operation details：

1. Selecting stitch position modification ① Enter the modification mode.（Refer to【7.2 Entering the modification mode】） ②Press Stitch Data Change ---- and . Stitch Position Modify . ③ Press to open the next screen.	
2. Determining the modification position ①Using Jog ,determine the position to be modified.(C point) ②Press when the position has been set.	

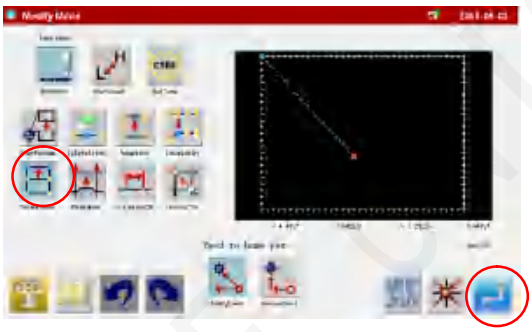
3. Setting the modification method and modification amount. ①To set the method, press  (pattern data after modification stitch moved), and Move to the modification position (point C') using the arrow mark icons. ② Press  The stitch positions will be modified. **【Memo】** Move the stitch length so that it is within the range of 12.7mm at the maximum.	
4. Confirming after modification ① Quit the modification mode. Press  to change to the Saving mode screen. Press  to return to the Standard screen after saving the data.	
5. Confirming with the Standard screen The stitch position has been modified.	

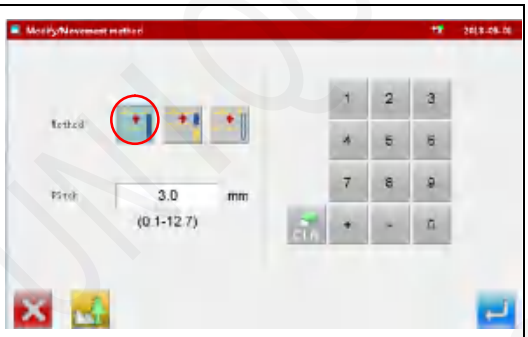
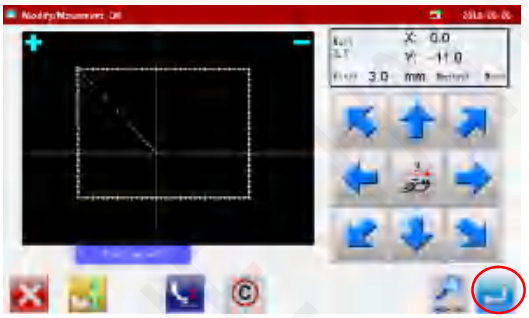
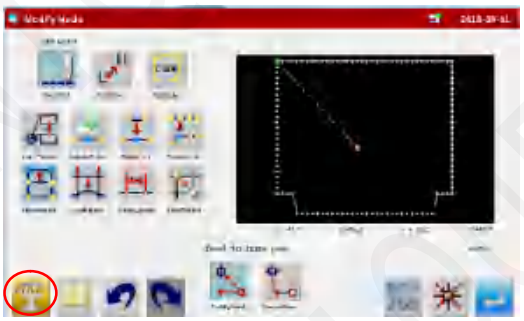
7.13 Moving a block (Changing the prior/subsequent data)

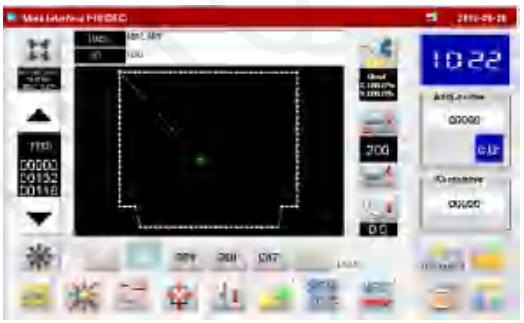
【Example】The section between the D point and E point of the following type of stitching data will be moved to the D' point to E' point. At this time, the data prior to and after the D' point to E' point will be changed.



Operation details：

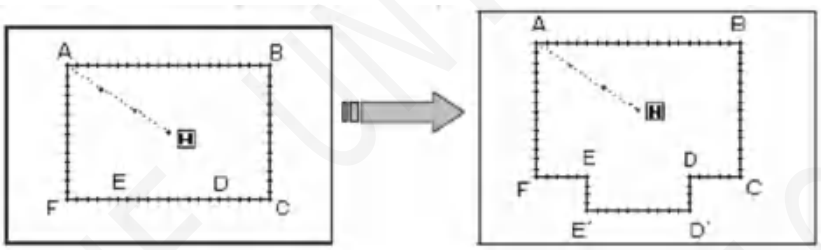
1. Selecting block movement ① Enter the modification mode.（Refer to【7.2 Entering the modification mode】） ②Press Stitch Data Change and Block Move . ③ Press to open the next screen.	
2. Determining the block modification range (start point) ①Using Jog determine the position to be modified.(D point) ②Press when the position has been set.	
3. Determining the block modification range (end point) ①Using Jog, determine the end point position. ② Press. **【Caution】**When the end point is determined, the presser will automatically return to the start Point. Take care when the needle is lowered, etc.	

4. Setting the movement method and stitch length. ①Set the movement method. Press Prior/Subsequent Data Change  . ②Set the stitch length. ③ Press  .	
5. Determining the movement amount ①Using the arrow icons, determine the movement amount. (Move to the position (point D').). ② Press  .The block position will be modified.	
6. Confirming after modification ① Quit the modification mode. Press  to change to the Saving mode screen. Press  to return to the Standard screen after saving the data.	

7.Confirming with the standard screen **The stitch position has been modified.**	

7.14 Moving a block (Adding new data to the prior/subsequent data)

【Example】The section between the D point and E point of the following type of stitching data will be moved to the D' point to E' point. At this time, new data will be added prior to and after the D' point to E' point. (The D point to D' point and the E point to E' point)



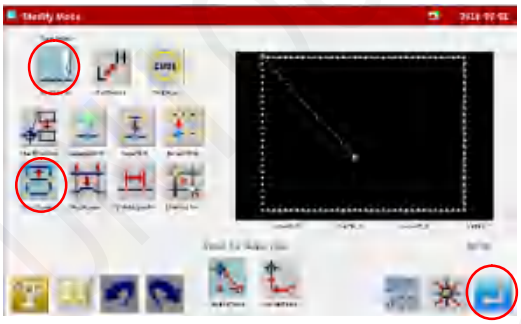
Operation details：

1. Selecting block movement

①Enter the modification mode.（Refer to【7.2 Entering the modification mode】）

②Press Stitch Data Change and Block Move .

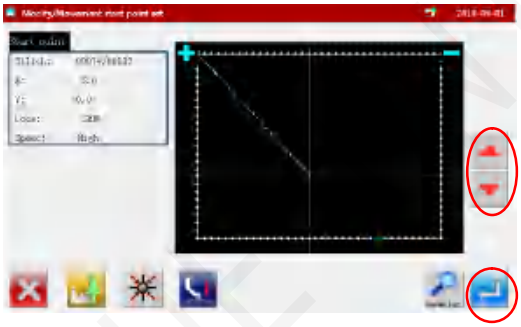
③Press to open the next screen.



2. Determining the block modification range (start point)

①Using Jog determine the position to be modified.(D point)

②Press when the position has been set.

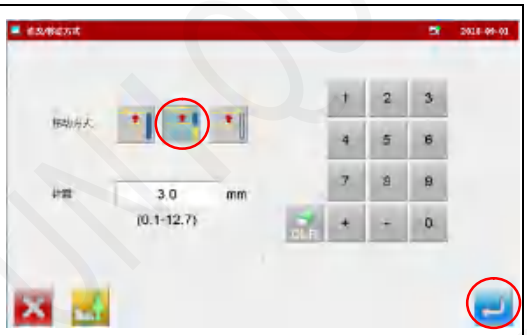
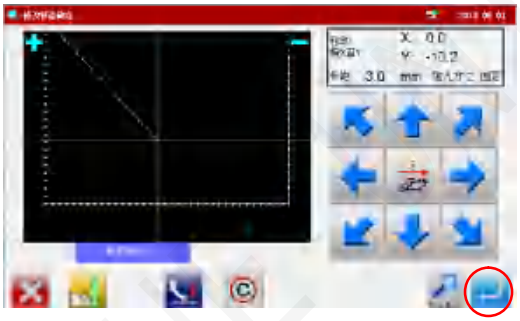
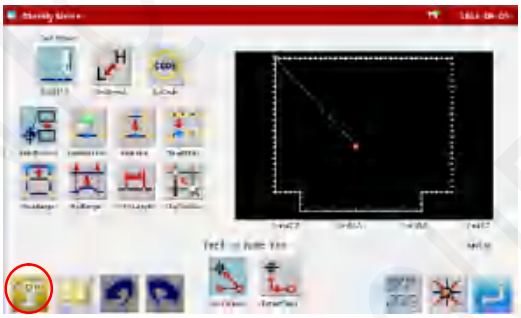


3. Determining the block modification range (end point)

①Using Jog determine the end point position. (E point).

②Press.

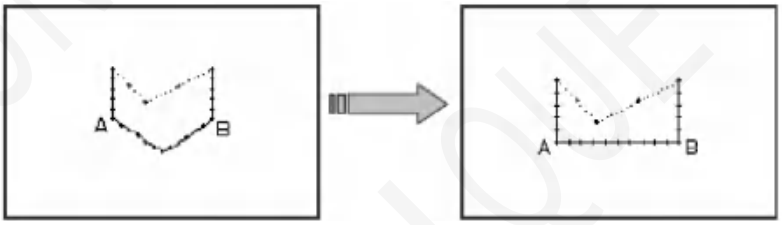
【Caution】When the end point is determined, the presser will automatically return to the start point. Take care when the needle is lowered, etc

4. Setting the movement method and stitch length. ①Set the movement method. Press Add New Stitch To Prior/Subsequent Data  . ②Set the stitch length. ③Press  .	
5. Determining the movement amount ①Using the arrow icons, determine the movement amount. (Move to the position (point D').). ②Press  .The block position will be modified.	
6. Confirming after modification ① Quit the modification mode. ②Press  to change to the Saving mode screen. Press  to return to the Standard screen after saving the data.	

7.Confirming with the standard screen **The stitch position has been modified.**	

7.15 Modifying a block (Linear input)

【Example】The section between the A point and B point of the following type of stitching pattern will be modified to a linear line.



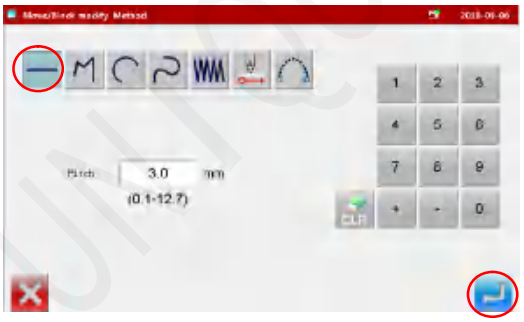
Operation details:

1. Selecting block movement ① Enter the modification mode.（Refer to【7.2 Entering the modification mode】） ②Press Stitch Data Change and Block Modify. ③Press to open the next screen.	

2. Selecting the input type and the stitch length

①Press Linear .

② Press to set the data.



3. Determining the block modification range (start point)

①Using Jog determine the position to be added. Move to the addition position (point A).

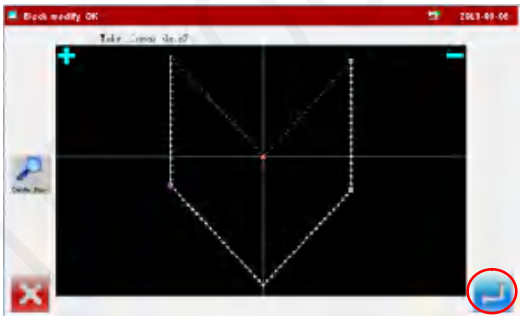
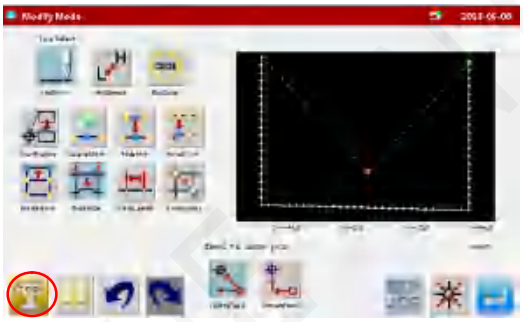
② Press when the position has been set.

4. Determining the block modification range (end point)

①Using Jog, determine the end point position.(B point)

②Press .

【**Caution**】When the end point is determined, the work holder will automatically return to the start point. Take care when the needle is lowered, etc.

5. Confirming the data creation ① Press  .	
6. Confirming after modification ① Quit the modification mode. ②Press  to change to the Saving mode screen. Press  to return to the Standard screen after saving the data.	
7.Confirming with the standard screen **The stitch position has been modified.**	

【Memo】1. When arc modification is selected for block modification: Arc modification will be executed just by indicating one point in the designated range.

2. When linear modification is selected for block modification: The modification range will be

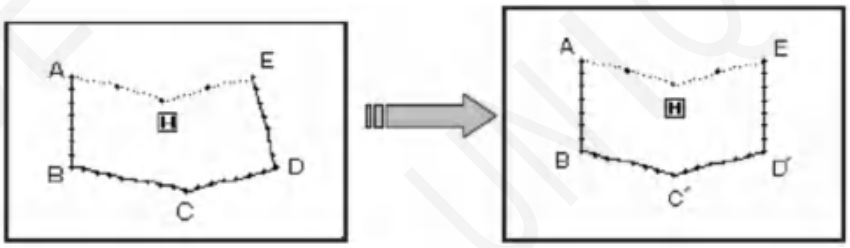
Connected with linear lines.

3. If the block to be modified contains code data, the code data will be deleted.

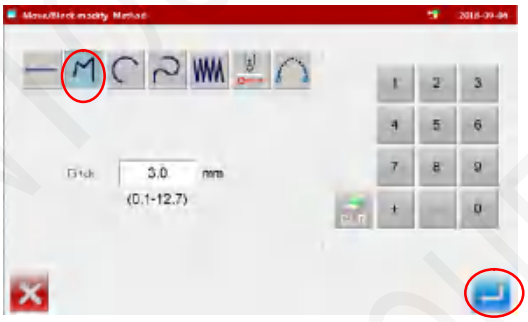
7.16 Modifying a block (Broken line, arc, curve input)

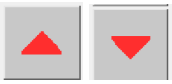
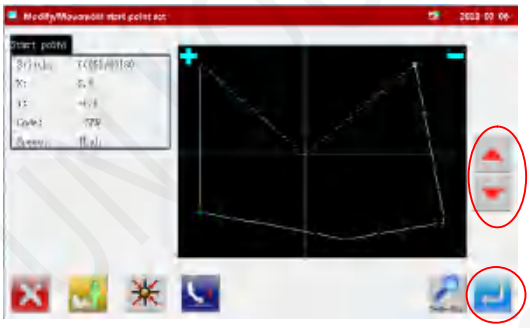
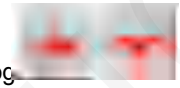
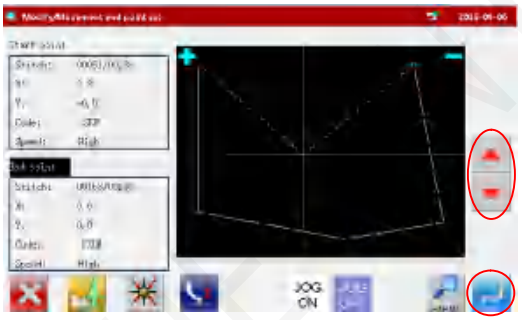
【Example】The C point and D point in the following type of data are each modified to

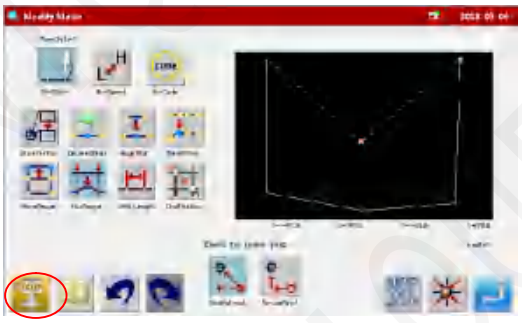
the C' point and D' point.



Operation details：

1. Selecting block movement ① Enter the modification mode.（Refer to【7.2 Entering the modification mode】） ②Press Stitch Data Change and Block Modify . ③Press to open the next screen.	
2. Selecting the input type and the stitch length ①n this case, press Broken Line . ② Press to set the data.	

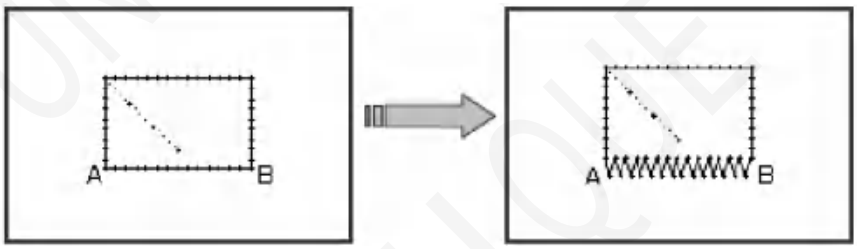
3. Determining the block modification range (start point) ①Using Jog  ,,determine the start point position.(B point) ② Press  .	
4. Determining the block modification range (end point) ①Using Jog  determine the end point position.(E point) ② Press  . **【Caution】**When the end point is determined, the work holder will automatically return to the start point. Take care when the needle is lowered, etc.	
5. Moving from the modification origin jog position to the modification position, and setting the data. ①Press the arrow icons and modify the position(Move to the C' point in this example.). ② Press  .	

6. Confirming the data creation ①Press the arrow icons to move the position to the D' point. ② Press . ③Press again.	
7. Confirming the data creation ①To create the data, press .	
8. Confirming after modification ① Quit the modification mode. ②Press to change to the Saving mode screen. Press to return to the Standard screen after saving the data.	

9.Confirming with the standard screen **The stitch position has been modified.**	

7.17 Modifying a block (Zigzag input)

【Example】The section between the A point and B point in the following type of stitching data is modified to a zigzag pattern.



Operation details：

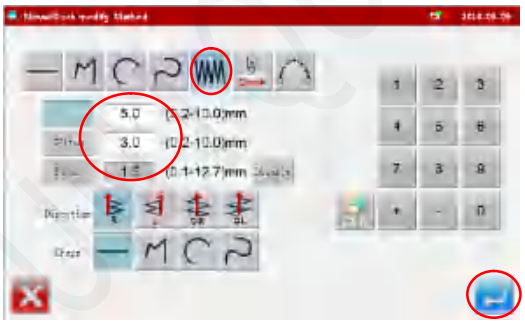
1. Selecting block movement ① Enter the modification mode.（Refer to【7.2 Entering the modification mode】） ②Press Stitch Data Change  and Block Modify  . ③Press  to open the next screen.	

2. Selecting the input type.

① Press zigzag  .

②Set the deflection width, feed amount and creation direction. Set the deflection width to 5.0mm, feed amount to 3.0mm, and the creation direction to right (R).

③ Press  to set the data.

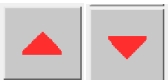


3. Determining the block modification range (start point)

①Using Jog  determine the position to be added. Move to the addition position (point A).

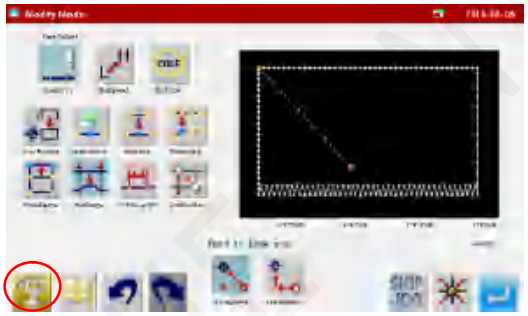
② Press  when the position has been set.

4. Determining the block modification range (end point)

①Using Jog  , ,determine the end point position (point B).

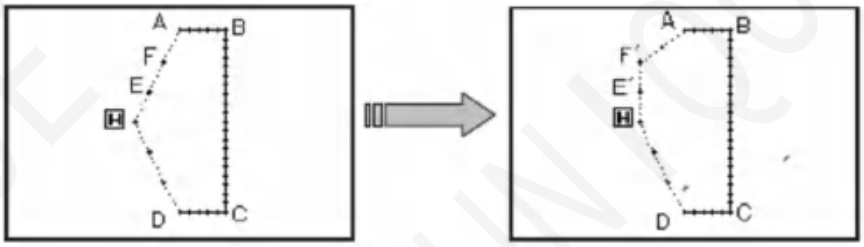
② Press  .

【**Caution**】When the end point is determined, the work holder will automatically return to the start point. Take care when the needle is lowered, etc.

5. Confirming the data creation. ①To create the data  .	
6. Confirming after modification. ① Quit the modification mode. ②Press  to change to the Saving mode screen. Press  to return to the Standard screen after saving the data.	
7.Confirming with the standard screen **The stitch position has been modified.**	

7.18 Modifying a block (Changing the feed data)

【Example】The E point and F point in the following type of data are each modified to the E' point and F' point.



Operation details：

1. Selecting block movement. ① Enter the modification mode.（Refer to【7.2 Entering the modification mode】） ②Press Stitch Data Change and Block Modify. ③Press to open the next screen.	
2. Selecting the input type. ① Press Feed data . ② Press to set the data.	

3. Determining the block modification range (start point)

① Because the start position is the home position, you do not need to move stitch.

② Press .

4. Determining the block modification range (end point)

①Using Jog determine the position to be added. Move to the addition position (point A).

② Press when the position has been set.

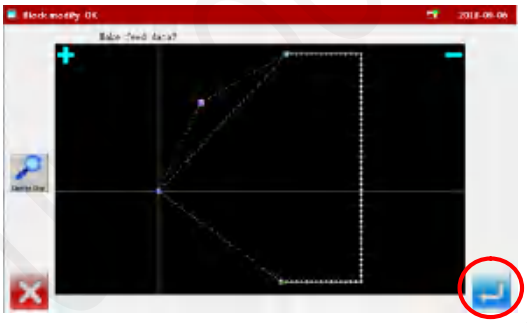
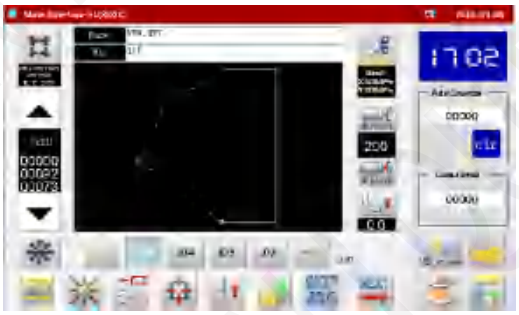
【Caution】When the end point is determined, the work holder will automatically return to the start point. Take care when the needle is lowered, etc.

5. Moving from the modification origin jog position to the modification position, and setting the data.

①Press the arrow icons and modify the position. (Move to the F' point in this example.)

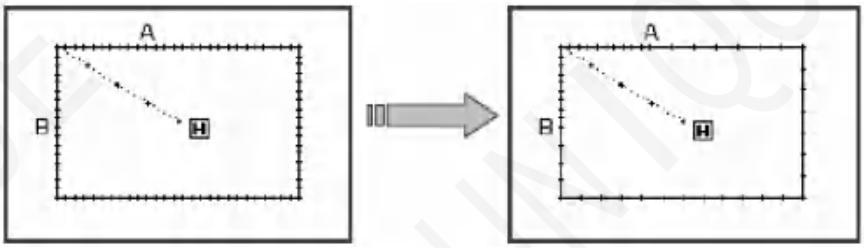
② Press .

③Press again.

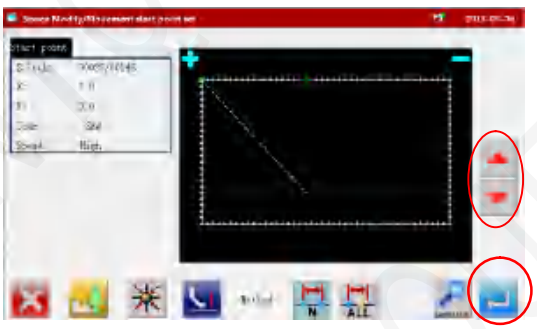
6. Confirming the data creation. ① Press  .	
7. Confirming after modification. ① Quit the modification mode. ②Press  to change to the Saving mode screen. Press  to return to the Standard screen after saving the data.	
8.Confirming with the standard screen **The stitch position has been modified.**	

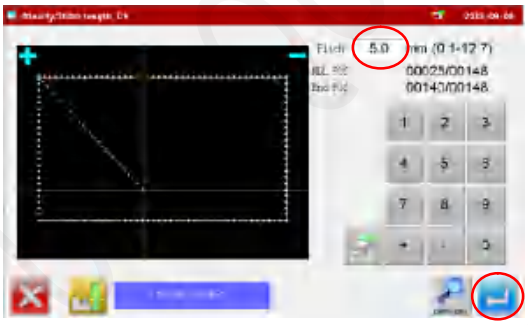
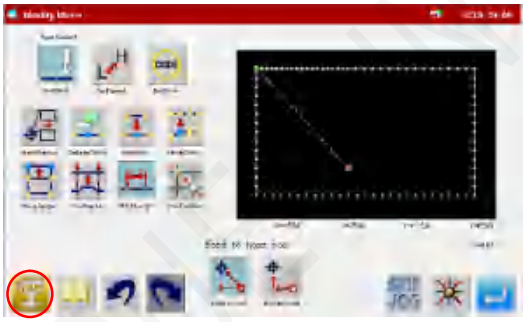
7.19 Modifying stitch length (Designated distance modification)

【Example】The stitch length between the stitching data point A and point B is modified as shown below. (3.0mm 7.0mm)



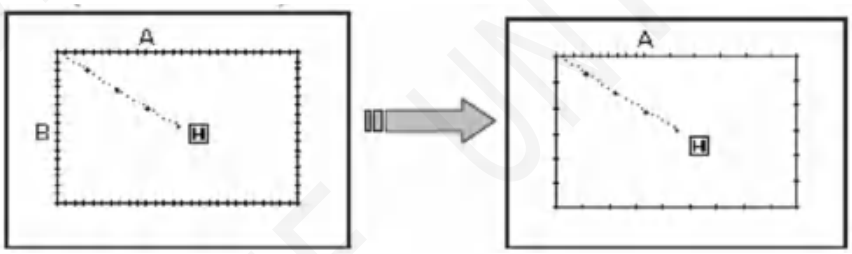
Operation details：

1. Selecting the stitch length modification. ① Enter the modification mode.（Refer to【7.2 Entering the modification mode】） ②Press Stitch Data Change and Block Modify . ③Press to open the next screen.	
2. Determining the modification method and the modification start position. ①Using Jog determine the position to be added. Move to the addition position (point A). ② Press when the position has been set.	

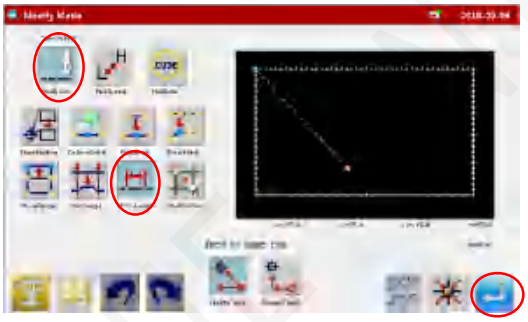
3. Setting the stitch length and confirming execution. ① Press  and input designated No. of stitches you want to modify. **4.** Setting Modifying stitch length. ① Use numeric keypad to setting Modifying stitch length. ② Press  .	
5. Confirming after modification. ① Quit the modification mode. ②Press  to change to the Saving mode screen. Press  to return to the Standard screen after saving the data.	
6.Confirming with the standard screen **The stitch position has been modified.**	

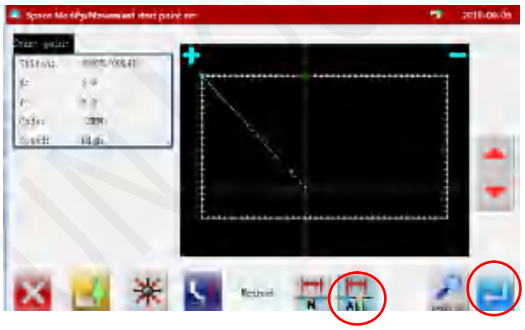
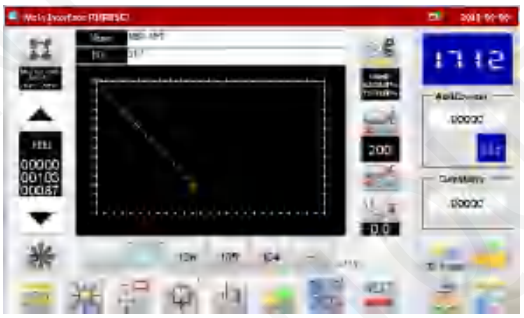
7.20 Modifying stitch length (All After designated stitch)

【Example】The stitch length from stitching data point A to the end of stitching is modified as shown below. (3.0mm 9.0mm).



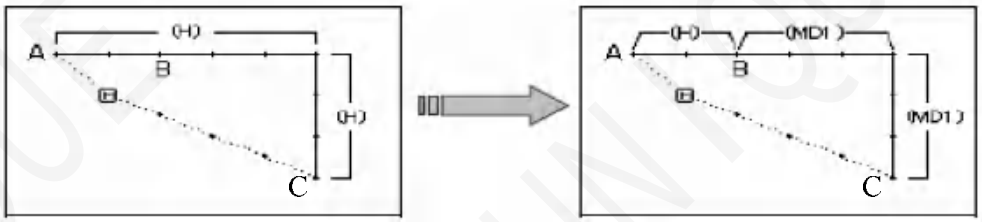
Operation details：

1. Selecting the stitch length modification. ① Enter the modification mode.（Refer to【7.2 Entering the modification mode】） ②Press Stitch Data Change and Stitch length modification . ③Press to open the next screen.	
2. Determining the modification method and the modification start position. ①Using Jog determine the position to be added. Move to the addition position (point A). ② Press when the position has been set.	

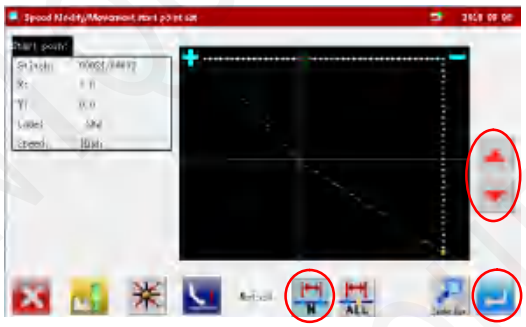
3. Select modified type. ①Press  to Modify All After designated stitch. **4.** Setting Modifying stitch length. ①Use numeric keypad to setting Modifying stitch length. ② Press  .	
5. Confirming after modification. ① Quit the modification mode. ②Press  to change to the Saving mode screen. Press  to return to the Standard screen after saving the data.	
6.Confirming with the standard screen **The stitch position has been modified.**	

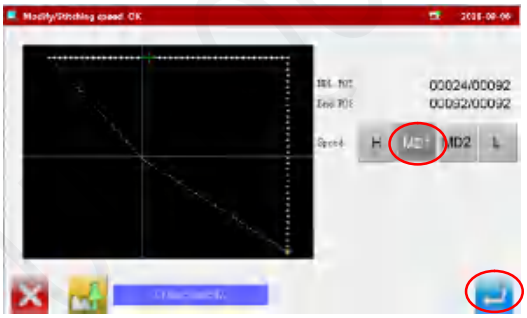
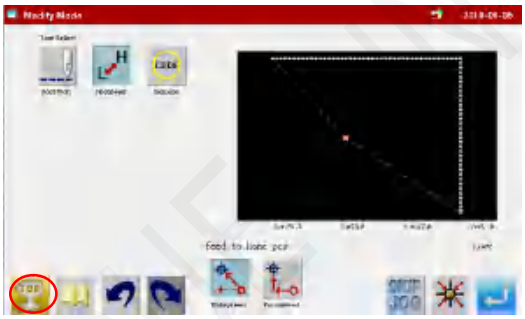
7.21 Modifying the stitching speed (Appoint modification start position and modification No. Stitches.)

【Example】The stitching speed for all sections after the B point in the following type of stitching data will be changed to medium-high speed(MD1).



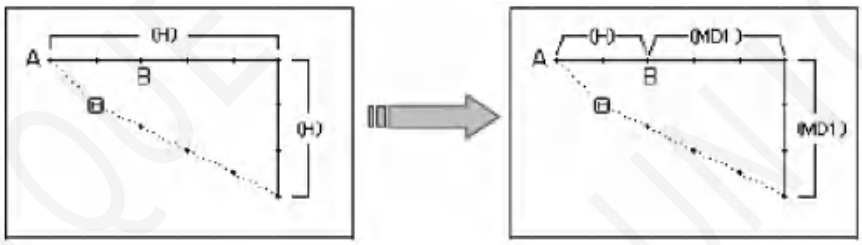
Operation details：

1. Selecting block movement. ① Enter the modification mode.（Refer to【7.2 Entering the modification mode】） ②Press Stitching Speed Change . ③Press to open the next screen.	
2. Determining the modification method and the modification start position. ①Using Jog determine the position to be added. Move to the addition position (point A). ② Press when the position has been set.	

3. Select speed **4.** Use numeric keypad to modify No. Stitches. **5.** Setting the modification speed. Press .	
6. Confirming after modification. ① Quit the modification mode. ②Press to change to the Saving mode screen. Press to return to the Standard screen after saving the data.	

7.22 Modifying the stitching speed (All sections after designated position)

【Example】The stitching speed for all sections after the B point in the following type of stitching data will be changed to medium-high speed(MD1).



Operation details:

1. Selecting block movement.

① Enter the modification mode.（Refer to【7.2 Entering the modification mode】）

②Press Stitching Speed Change  .

③ Press  to open the next screen.

2. Determining the modification method and the modification stich number

①Using Jog  determine the position to be added. Move to the addition position (point A).

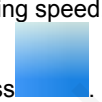
② Press  when the position has been set.

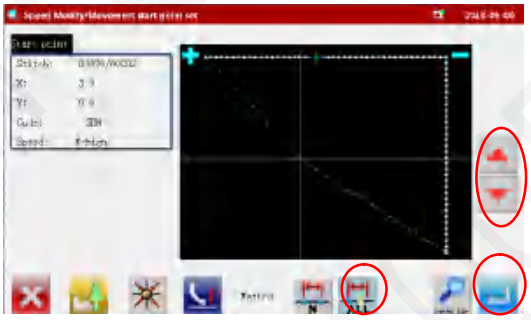
3. Select modified type.

Press All After Designated Stitch  .

4. Setting the modification speed.

① Setting speed.

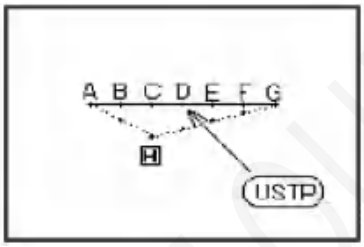
② Press  .



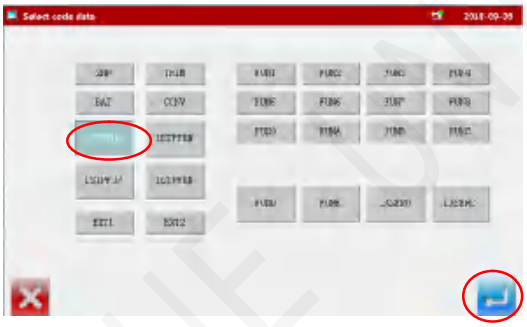
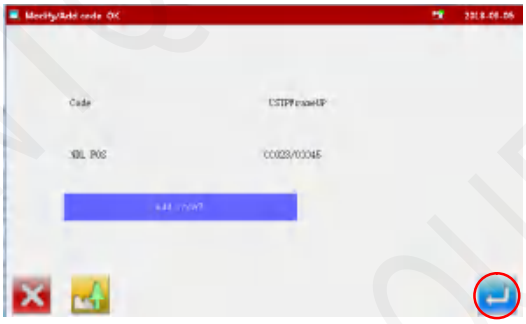
5. Confirming after modification. ① Quit the modification mode. ②Press  to change to the Saving mode screen. Press  to return to the Standard screen after saving the data.	

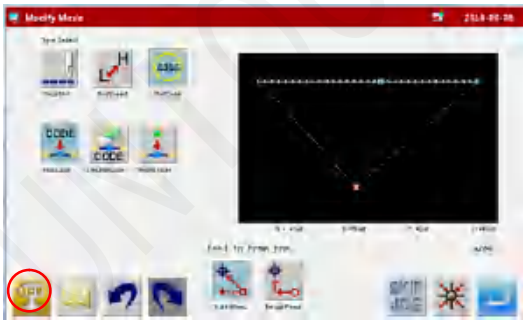
7.23 Modifying code data (Adding code data)

【Example】The needle UP halt code (USTP) will be added to the D point of the following type of stitching data.



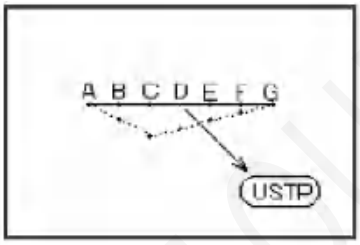
1. Selecting block movement. ① Enter the modification mode.（Refer to【7.2 Entering the modification mode】） ②Press Code Data Change  and then press Code Data Add  . ③Press  to open the next screen.	

2. Determining the code addition position. ①Using Jog  determine the position to be added. Move to the addition position (point A). ② Press  when the position has been set.	
3. Setting the code to add ①Press Needle UP Halt.  ② Press  .	
4. Confirming execution. Press  .	

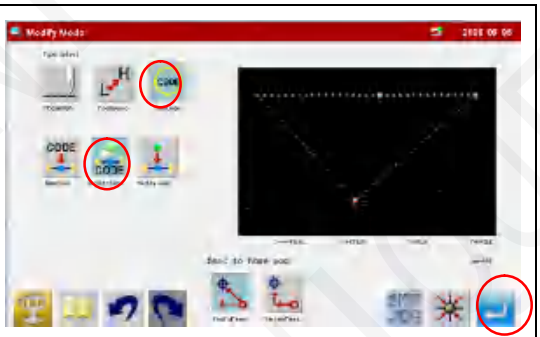
5. Confirming after modification. ① Quit the modification mode. ②Press  to change to the Saving mode screen. Press  to return to the Standard screen after saving the data.	

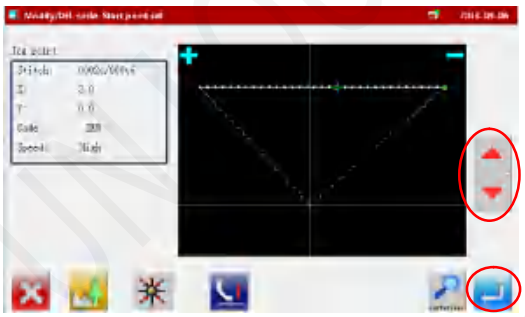
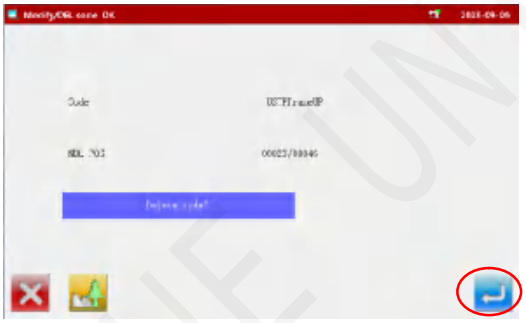
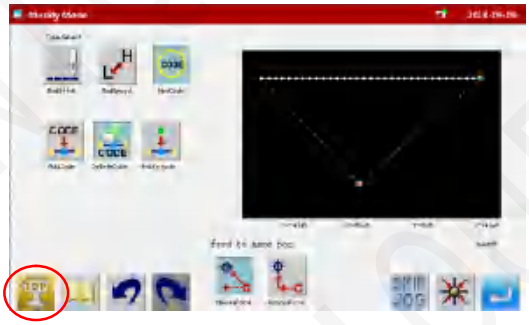
7.24 Modifying code data (Deleting code data)

【Example】The needle UP halt code (USTP) will be deleted from the D point of the following type of stitching data.



Operation details:

1. Selecting block movement. ① Enter the modification mode.（Refer to【7.2 Entering the modification mode】） ②Press Code Data Change  , and then press Code Data Delete  . ③Press  to open the next screen.	

2. Determining the code deletion position. ①Using Jog  determine the position to be added. Move to the addition position (point A). ② Press  when the position has been set.	
3. Confirming execution. Press  .	
4. Confirming after modification. ① Quit the modification mode. ②Press  to change to the Saving mode screen. Press  to return to the Standard screen after saving the data.	

Chapter eight: Data conversion mode

8.1 Main data conversion mode functions

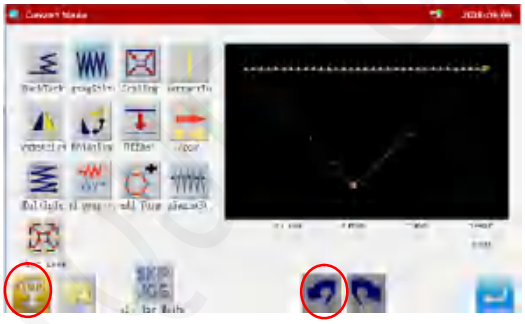
Function	Icon	Details	Details setting
Back tacking		Existing back tacking can be modified, and new back tacking can be created.	 : Start/end back tacking  : Overlap back tacking (Valid only for a closed figure.)
Zigzag stitching		Existing zigzag stitching can be Modified and new zigzag stitching can be created.	—
Scaling		Scaling with a set stitch length or set No. of stitches can be carried out independently for the X axis and Y axis centering on the center point.	<Center position>  : Jog Designation  : Pattern Center  : Home position Center  : No. of Stitches Fixed  : Fixed Stitch Length
Symmetrical		Using the existing sewing data, X-axis, Y-axis, or XY axis symmetrical pattern can be created. Whether to keep or delete the Existing stitching data can also be selected.	<Methods>  : Symmetrical Origin Clear : Keep Symmetrical Origin
Rotation		The pattern can be rotated centering on a random center point.	<Center Position>  : Jog Designation  : Pattern Center  : Home position Center
Offset		The offset distance and direction for offset stitching data can be changed.	—
Multiple		The multiple distances, multiple direction and number of multiple stitching times for multiple stitching data can be changed.	—

8.2 Entering the conversion mode

Press  and  on the Standard screen to enter the conversion mode.

8.3 Quitting the conversion mode

Press  to change to the Saving mode screen. Press  to return to the Standard screen after saving the data.

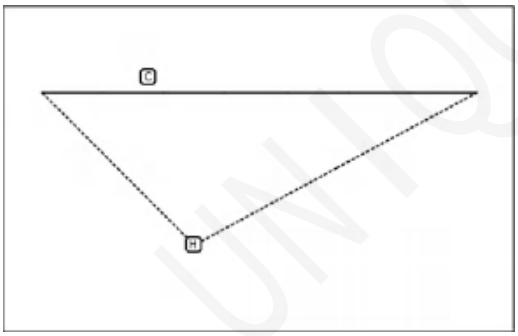


8.4 Confirming on the image screen (for the conversion mode)

Scaling, rotation

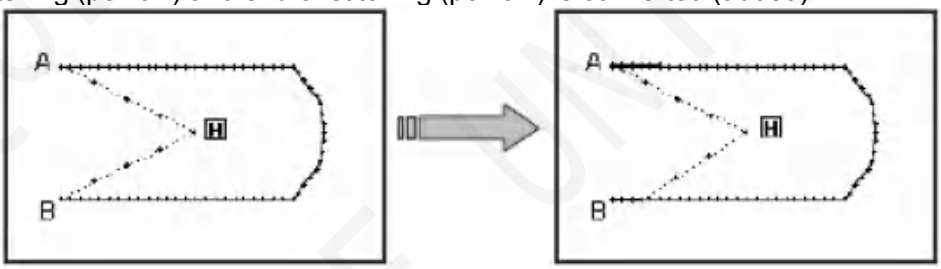
H: Indicates the home position.(Common for all Image screens.)

C: Indicates the center position.

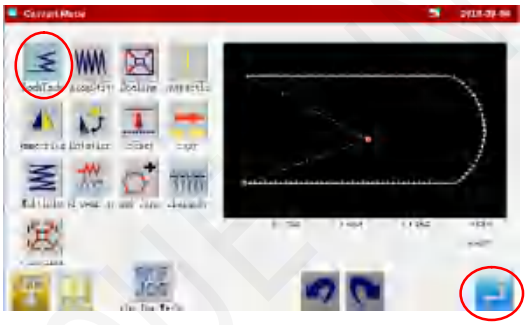


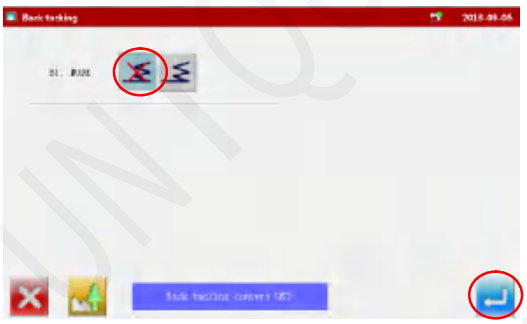
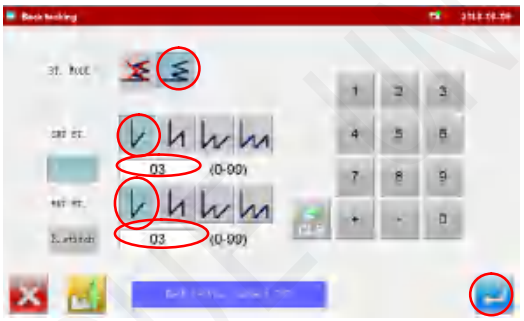
8.5 Back tacking(Start/end back tacking)

【Example】In the following type of stitching data, the start/end back tacking at the start of stitching (point A) and end of stitching (point B) is converted (added).



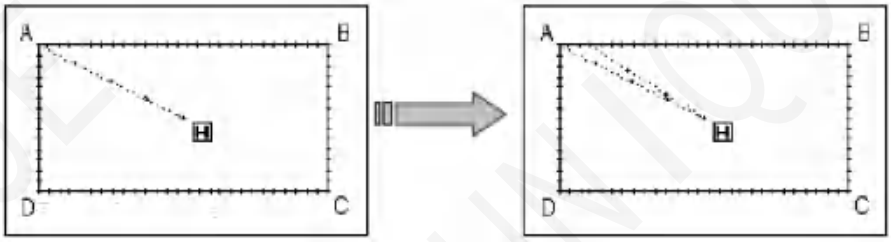
Operation details：

1. Selecting back tacking ① Enter the conversion mode.（Refer to【8.2 Entering the conversion mode】） ②Press Back tacking . ③ Press.	
2. Setting the block for converting back tacking ①Using jogging, move to the block where back tacking is to be converted. (In this case, move to a point between point A and point B. ② Press.	

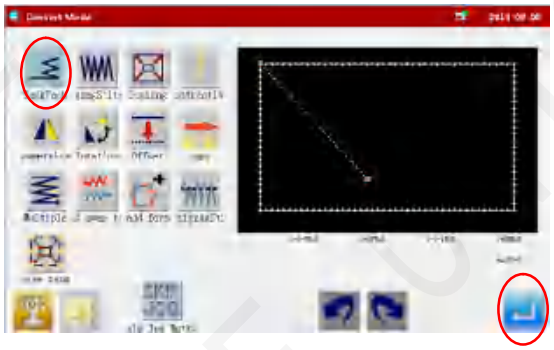
3. Selecting start/end back tacking Press start/end back tacking  .	
4. Setting the back tacking details ①The details are set on this screen. (The details set here are,  (start/end back tacking)) start mode,  (N mode), five start stitches, end mode  (M mode) and three end stitches.) ② Press  .	
5. Confirming after modification ①Quit the conversion mode. ②Press  to change to the Saving mode screen. Press  to return to the Standard screen after saving the data.	

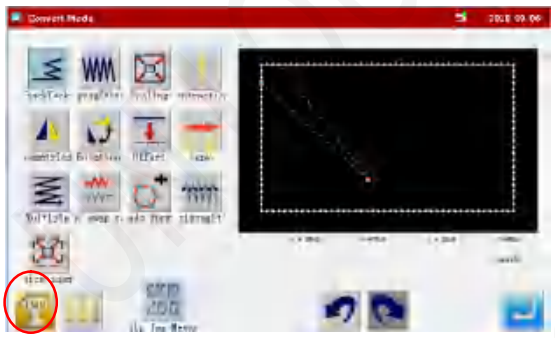
8.6 Back tacking(Overlap back tacking)

【Example】In the following type of stitching data, the overlap back tacking is converted (Point A-B-C-D-A : Broken line)



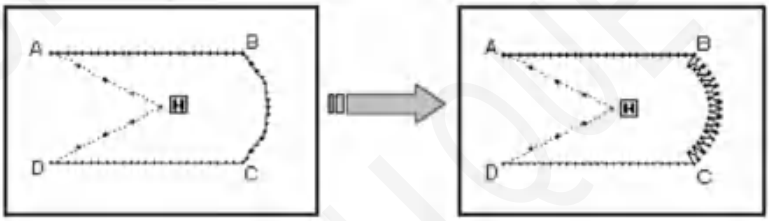
Operation details：

1. Selecting back tacking ①Enter the conversion mode.（Refer to【8.2 Entering the conversion mode】） ②Press Back tacking . ③ Press .	
2. Setting the block for converting back tacking. ①Using jogging, move to the block where back tacking is to be converted. ② Press .	
3. Selecting overlap back tacking Press overlap back tacking.	

4. Confirming after modification ①Quit the conversion mode. ②Press  to change to the Saving mode screen. Press  to return to the Standard screen after saving the data.	

8.7 Zigzag stitching

【Example】In the following type of stitching data, the arc section between point B and point C is converted (added) to zigzag stitching. (Point A to point B: linear, point B to point C: arc, point C to point D: linear)



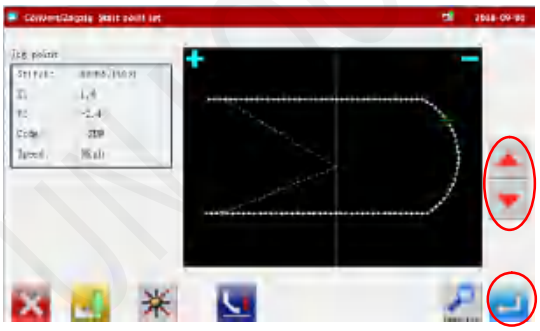
Operation details：

1. Selecting zigzag stitching ①Selecting zigzag stitching（Refer to【8.2 Entering the conversion mode】） ②Press zigzag  . ③ Press  .	

2. Setting the block for converting zigzag

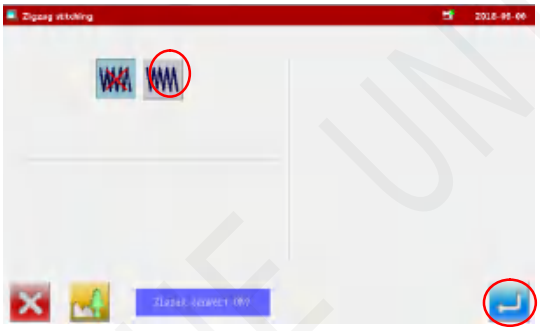
①Using jogging, move to the block to be converted to
Zigzag stitching. (In this case, move to the arc section)
(Point between point B and point C).)

② Press .



3. Selecting zigzag

Press zigzag .

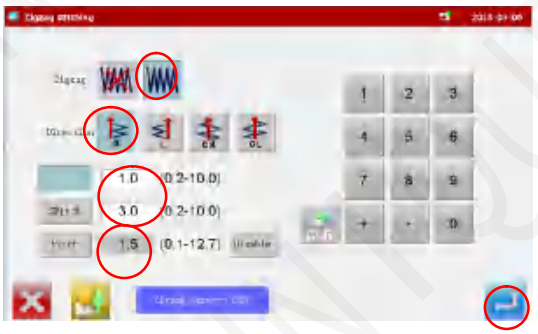


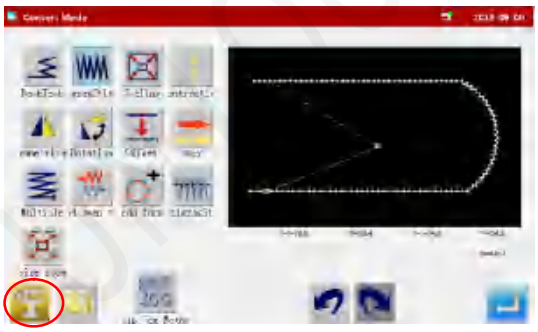
4. Setting the zigzag details

①The details are set on this screen.

(Press , set the deflection width to 4.0, and feed amount to 3.0 The creation direction is .)

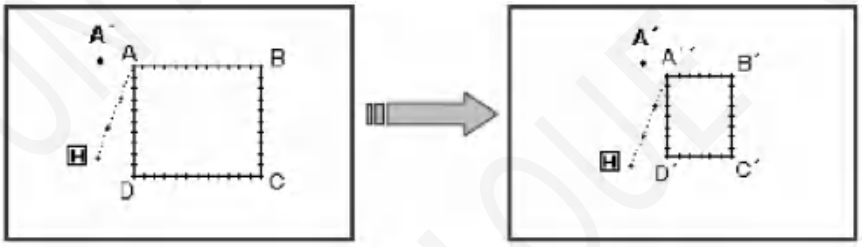
② Press .



5. Confirming after modification ①Quit the conversion mode. ②Press  to change to the Saving mode screen. Press  to return to the Standard screen after saving the data.	

8.8 Scaling

【Example】The data will be reduced (X: 50%, 75%) with a fixed stitch length centering on the A' point in the following type of stitching data.



Operation details：

1. Selecting scaling ①Enter the conversion mode.（Refer to【8.2 Entering the conversion mode】） ②Press Scaling  . ③ Press  .	

2. Setting the scaling method, etc

①Method

 : No. of Stitches Fixed

 : :Fixed Stitch Length

（Press Fixed Stitch Length for this example）

②Set the X, Y enlargement rate (reduction rate) with the numeric keypad or up/down arrow icons.

③Center designation

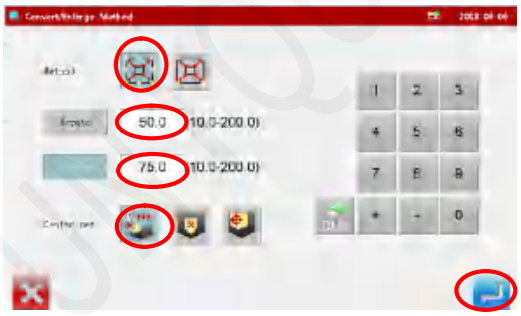
 : :Jog center designation.

 : Pattern center.

 : Home position center

（Press Jog Center Designation for this example.）

Press  .



3. Setting the center position

①In the jog mode, move to the needle near the desired enlargement/contraction center. (In this case, move to point A.)

② Press  .

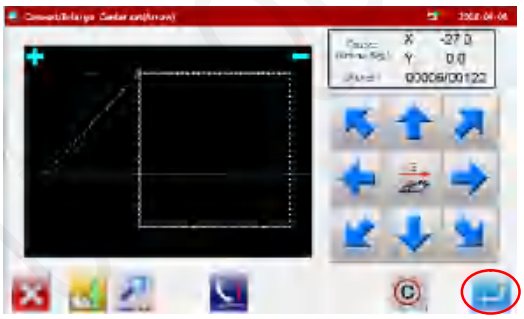
【Memo】The center point can be designated without using the jog icons. In this case, press only  .

4. Setting the center position details

①If the center point is not to be set on the stitching data, use the arrow icons and move to the position to be used as the center. (A point).

②After moving to the desired center position, press .

【Memo】If the desired center position is on the pattern data, do not move using the arrow, but just press .



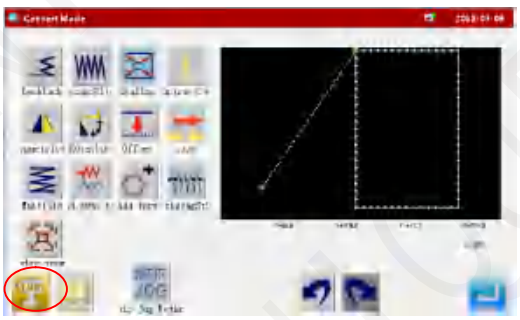
5. Confirming execution of conversion

① Press .

6. Confirming after modification

①Quit the conversion mode.

②Press to change to the Saving mode screen. Press to return to the Standard screen after saving the data.



【Memo1】Circle scaling

A circle will be created even if the X, Y enlargement ratio/contraction ratios are set to different values.

【Memo2】Expanded/reduces for zigzag sewing, multiple sewing, and offset

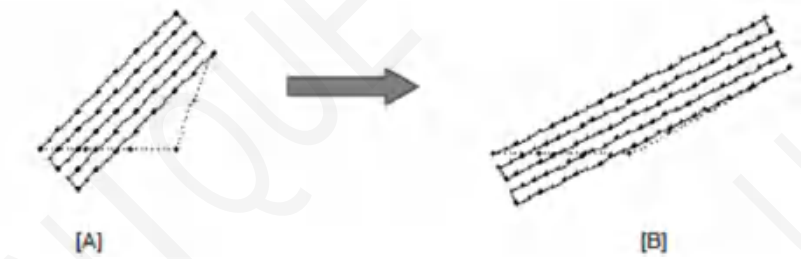
sewing.

Sewing in zigzag, multiple, and offset an under mentioned set item is not influenced by the expansion/the reduction.

(The function as the offset is lost by the expansion/the reduction about the offset.)

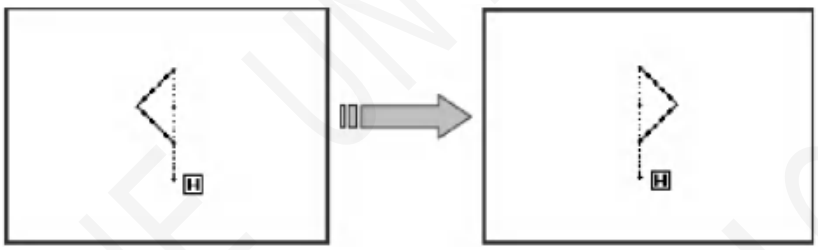
The「distance」of expanded can not scaling. The「distance」of offset sewing can not scaling.（If you want to change this data, please use the function of expanded, offset sewing data transformation instead of use scaling.）

It is expanded like 3mm of B in the offset width, when data [A] of multiple sewing of the 3mm width and expands 200% of X scale made by B data like the figure below.



8.9 Symmetrical

【Example】The left state of the following type of stitching data will be converted into a right state.



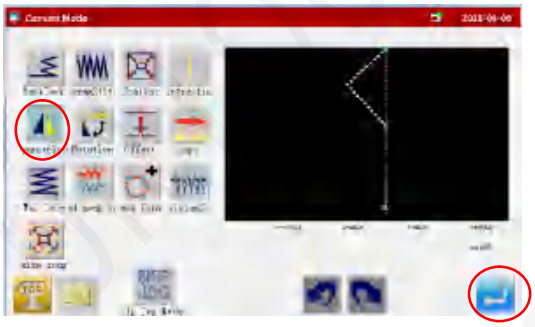
Operation details：

1. Selecting symmetrical

①Enter the conversion mode.（Refer to【8.2 Entering the conversion mode】）

②Press Symmetrical .

③ Press .



2. Setting symmetrical method,etc.and executing

①Clearing symmetrical origin data

：Delete Symmetrical Origin Data

：Keep Symmetrical Origin Data

（Press "Delete" for this example）

②Method

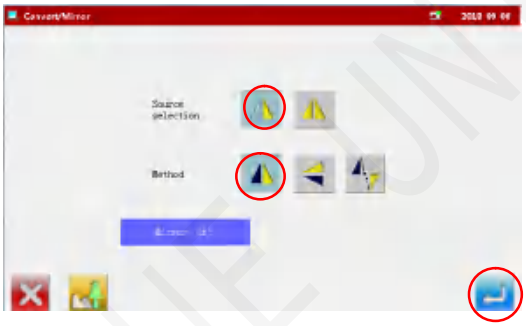
：X Symmetrical Data Creation

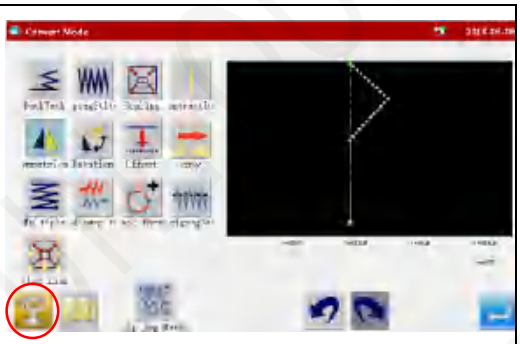
：Y Symmetrical Data Creation

：XY Symmetrical Data Creation

(Press "X Symmetrical Data Creation" for this example.)

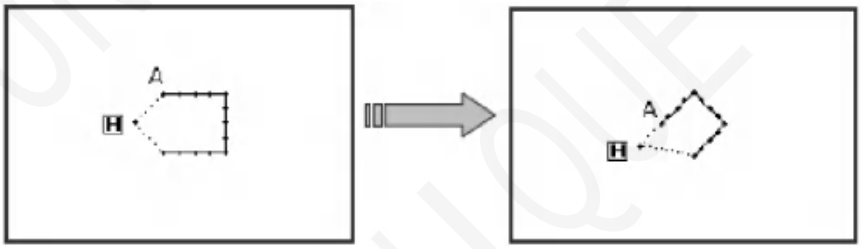
③ Press .



3. Confirming after modification ①Quit the conversion mode. ②Press  to change to the Saving mode screen. Press  to return to the Standard screen after saving the data.	

8.10 Rotation

【Example】The pattern will be rotated by 45? Centering on the A point in the following type of stitching data.



Operation details：

1. Selecting rotation ①Enter the conversion mode（Refer to【8.2 Entering the conversion mode】） ②Press Rotation  . ③ Press  .	

2. Setting the rotation method, etc.

①Direction

：Left Rotation

：Right Rotation

（Press "Left Rotation" for this example.）

②Angle

Input the angle from the numeric keypad. (Input 45$ for this example.)

③Center Designation

：Jog center designation

：Pattern center

：Home position center

（Press "Jog Center Designation" for this example.）

④ Press  .

3. Setting the center position

①In the jog mode, move to the needle near the desired center.

② Press  .

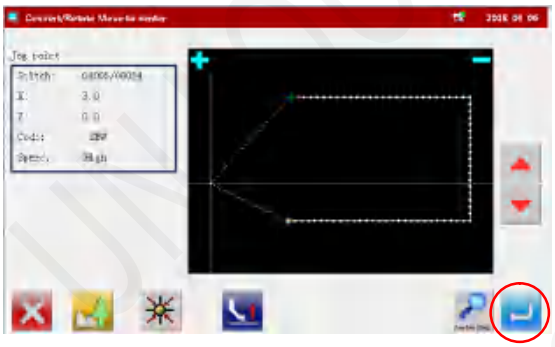
【Memo】The center point can be used without using the Jog icons. In this case, press only  .

4.Setting the center position details

①If the center point is not to be set on the stitching data, use the arrow icons and move to the position to be used as the center.

②After setting the center, press .

【Memo】If the desired center position is on the pattern data, do not move using the arrow, but just press



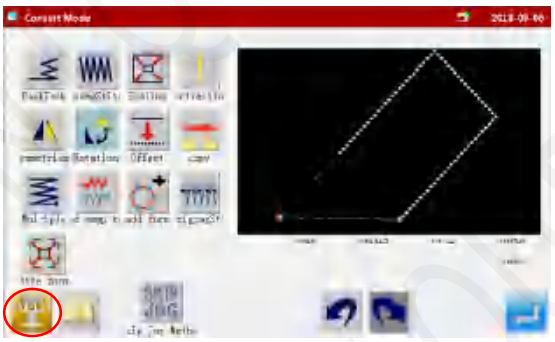
5. Confirming execution of conversion

Press .

6. Confirming after modification

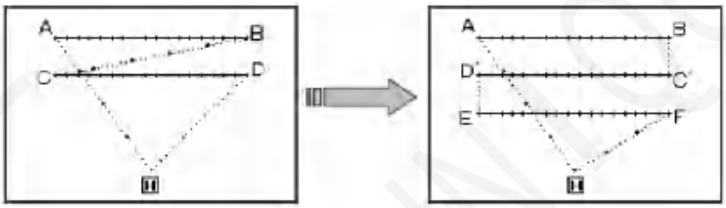
①Quit the conversion mode.

②Press to change to the Saving mode screen. Press to return to the Standard screen after saving the data.

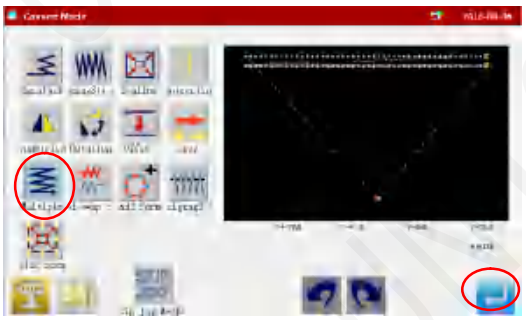


8.11 Multiple

【Example】ABCD designated two times for multiple stitching (feed data specifications) in the following type of stitching data, will be converted to the ABC'D'EF designated three times for reverse multiple stitching (feed data specifications).



Operation details：

1. Selecting multiple stitching ①Enter the conversion mode. ②Press Multiple Stitching . ③ Press .	
2. Selecting and confirming the multiple stitching to be changed. ① Press to select the multiple to be changed. (The multiple numbers No. 1, 2, 3 are assigned in the created order.) ② Press after select the data.	
3. Setting the conversion method ①Select and input the multiple stitching method, direction, distance and number of times ：Multiple (Feed data) ：Multiple (Stitching specifications) ：Reverse Multiple (Feed data)	

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：Reverse Multiple (Stitching specifications)
(In this case, select the "Multiple (Stitching specifications)")
②Select the direction. (In this case, select "right".)

：Left direction

：Right direction
③Input the distance value. (In this case, input "5 mm".
④Input the number of times. (In this case, input "3 times".)
⑤ Press  .
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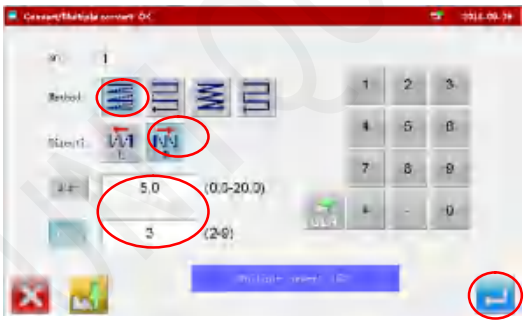

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4. Confirming after modification
①Quit the conversion mode.
②Press  to change to the Saving mode screen. Press  to return to the Standard screen after saving the data.
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