

This pattern is stored in other embroidery card.

This message is displayed when the RETRIEVE key is touched and the design in the machine's memory is from a different memory card than is currently inserted.

Most memory card designs cannot be saved into the machine's memory. However, the designs from memory card #1, the Alphabetic card can be saved and retrieved while the card is inserted. The card that the design was saved from must be inserted in order to retrieve the design.

This pattern can not be saved in the memory.

This message is displayed when you are trying to save patterns that cannot be combined.

Embroidery card is not inserted. Turn off main power and insert card.

This message is displayed if "CARD" is touched while no memory card is inserted.

Raise the presser foot and re-thread.

This message is displayed when the "START/STOP" button is pressed but the presser foot has not been raised to change the thread color.

If you are not changing the thread color, raise the presser foot lever, then lower it again, and then press the "START/STOP" button to start the machine.

The stitch for this pattern cannot be adjusted.

This message is displayed if "STITCH ADJUSTMENT" is touched and it is not possible to adjust the thread density for the selected pattern.

This key does not work when needle is at low position. Raise the needle to high position and touch key again.

This message is displayed if an attempt is made to move the embroidery frame while the needle is in the down position. Use the balance wheel to move the needle to the highest position. Then continue.

Embroidery pattern is exceeding sewing area.

This message is displayed if the combined size of patterns exceeds the size of the embroidering area.

Raise the needle to high position.

This message is displayed if the needle is in the down position when the power is turned on.

Color, size and stitch adjustment
cannot be changed halfway.

This message is displayed if "MULTI COLOR", "SIZE" or "STITCH ADJUSTMENT" is pressed when pattern embroidering has already begun.

Complete pattern entry.

This message is displayed if the "START/STOP" button is pressed when pattern input for a "flame pattern" has not yet been completed.

No more stitches can be combined.

This message is displayed when the total number of characters or patterns combined exceeds a maximum 35.

Instruction message displays



Winding bobbin
thread.

This message is displayed during bobbin winding.

Saving

This message is displayed after a "MEMORY" space is touched to save a pattern to that space. The power should not be turned off while this is on the display.

Audio alarms

- Proper operation will sound: One beep
In proper (wrong) operation will sound: Two or four beeps

TROUBLESHOOTING

Check for the cause of the problem without worrying.

Whenever embroidering becomes difficult, review the section of the instruction book which explains the operation you are performing to make sure that you are using the machine correctly. If you still have difficulty, the following check list may help you correct it. If you still experience difficulties, contact your dealer or nearest authorized service center.

Trouble with thread and stitches

Symptom	Probable cause	Remedy
1. Upper thread breaks	1. The upper threading is not correct.	1. Re-thread the upper thread.
	2. The upper thread is tangled.	2. Clean the race or inner rotary hook.
	3. The spool of thread is not correctly set.	3. Set the spool of thread correctly.
	4. The correct needle is not used.	4. Change to the proper needle.
	5. A thread other than the designated upper embroidery thread is being used.	5. Replace with the designated upper embroidery thread.
2. Lower thread breaks	1. The upper thread is tangled.	1. Clean the race or inner rotary hook.
	2. The bobbin is not threaded properly in the shuttle.	2. Remove the bobbin, reset the bobbin properly and pull the bobbin thread through the channel.
	3. A thread other than the designated lower embroidery thread is being used.	3. Replace with the designated lower embroidery thread.
3. Skipped stitches	1. The needle is not correctly inserted.	1. Set the needle properly.
	2. The correct needle is not used.	2. Change to the proper needle.
	3. The fabric has been placed in the embroidery frame incorrectly.	3. Place the fabric in the embroidery frame correctly.
	4. The embroidery frame has been attached to the machine incorrectly.	4. Attach the embroidery frame to the machine correctly.
	5. Thin or stretch fabric is being used with no stabilizer fabric attached.	5. Attach stabilizer fabric.
4. Fabric puckers	1. The upper thread tension is too strong.	1. Decrease the upper thread tension using the upper thread tension dial.
	2. The upper or lower thread is not threaded correctly.	2. Thread the upper and lower threads correctly.
	3. Thin or stretch fabric is being used with no stabilizer fabric attached.	3. Attach stabilizer fabric.
	4. The fabric has been placed in the embroidery frame incorrectly.	4. Place the fabric in the embroidery frame correctly.
	5. The correct needle is not used.	5. Change to the proper needle.

Symptom	Probable cause	Remedy
5. Lower thread is visible on the top surface of the fabric	1. The upper thread tension is too strong.	1. Decrease the upper thread tension using the upper thread tension dial.
	2. The upper or lower thread is not threaded correctly.	2. Thread the upper and lower threads correctly.
	3. The thread has been threaded incorrectly through the inner rotary hook.	3. Remove the bobbin, reset the bobbin properly and pull the bobbin thread through the channel.
	4. A thread other than the designated lower embroidery thread is being used.	4. Replace with the designated lower embroidery thread.
6. Upper thread is loose	1. The upper thread tension is too weak.	1. Increase the upper thread tension using the upper thread tension dial.
	2. The upper or lower thread is not threaded correctly.	2. Thread the upper and lower threads correctly.
	3. Threads other than the designated upper and lower embroidery thread are being used.	3. Replace with the designated upper and lower embroidery threads.
7. Embroidered pattern is out of shape	1. The fabric has been placed in the embroidery frame incorrectly.	1. Place the fabric in the embroidery frame correctly.
	2. The embroidery frame has been attached to the machine incorrectly.	2. Attach the embroidery frame to the machine correctly.
	3. Thin or stretch fabric is being used with no stabilizer fabric attached.	3. Attach stabilizer fabric.
	4. Threads other than the designated upper and lower embroidery thread are being used.	4. Replace with the designated upper and lower embroidery threads.
	5. The thread is tangled.	5. Cut and remove the tangled threads inside the rotary hook using scissors. Clean the race or inner rotary hook.
8. Threading is not possible	1. The needle is installed incorrectly.	1. Install the needle correctly.
	2. The needle threader lever will not turn.	2. Turn the balance wheel to raise the needle to its highest position.

Mechanical problems

Symptom	Probable cause	Remedy
1. Machine operation is slow and noisy	1. Thread scraps and dust have accumulated under the needle plate.	1. Remove the thread scraps and dust with a brush.
2. The machine does not start	1. The "START/STOP" button is not pressed.	1. Press the "START/STOP" button.
	2. The main power switch is in the off position.	2. Turn the power on.
	3. The presser foot is not lowered.	3. Lower the presser foot.
	4. Check Error messages.	4. See "ERROR MESSAGE" on page 57.
3. The needle breaks	1. The needle is not correctly inserted.	1. Remove the needle and reset a new needle properly.
	2. The correct needle is not used.	2. Change to the proper needle.

Caution

- This machine is equipped with a thread breakage detector. Accordingly, if the upper thread is not threaded, the machine will not operate even if the "START/STOP" button is pressed. In addition, a loud noise which is different from the normal operation noise is generated by the needle bar holding mechanism during layout changes, layout change tests and also when the embroidery frame travels a lot during embroidery. This sound is normal and is not the result of a malfunction.
- If the power goes off during embroidering:
 - Turn the power off and unplug the machine. Damage may occur if the machine is on when the power comes back on.
 - To start again, while the main power switch is off, plug the unit in. Then turn the main power switch on and select an operation. Refer to page 47, using the "HELP" function to get back to the point where the machine went off.

PATTERNS

Characters/Frame Patterns/Single Motif Patterns

Character embroidering chart

Sizes: [L] 30 mm (1-3/16"), [M] 15 mm (9/16"), [S] 7.5 mm (1/4").>

ABCDEFGHIJKLMNOPQRSTUVWXYZ
 abcdefghijklmnopqrstuvwxyz
 ÄÅÆÑÖØÇÜß äåæëèéêñöøìçü
 & ? ! □ ' , . - 0 1 2 3 4 5 6 7 8 9

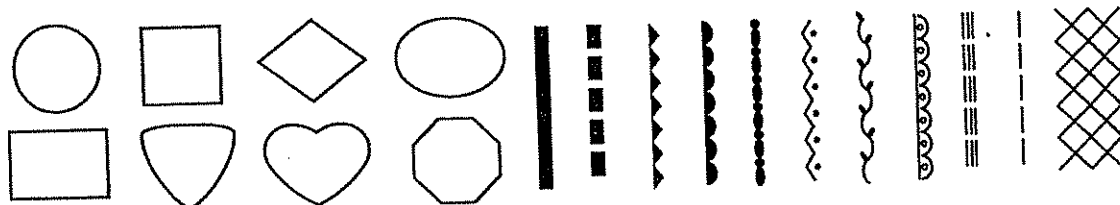
Frame pattern embroidering chart

<Sizes can be enlarged or reduced.>

Note:
 When using special threads, problems with embroidering may occur if the size of the pattern is reduced too much.

Frames

Stitches



One point mark embroidery pattern

<Sizes: [L] 50 mm (1-15/16"), [S] 25 mm (15/16")>

<Embroidering times: [L]: 4 - 12 min. [S]: 2 - 4 min.>



Fig.	Order of sewing	Embroidery thread color
1	1 2 3	White Red Black
2	1 2 3	Gray Red Black
3	1 2 3	Yellow Brown Black
4	1 2 3	Brown Yellow Black
5	1 2 3	Brown Red Black
6	1 2 3	Yellow White Black
7	1 2 3	White Red Black
8	1 2 3	Yellow Red Black
9	1 2 3	Skin Sky Blue Black
10	1 2 3	Skin Red Black

Fig.	Order of sewing	Embroidery thread color
11	1 2 3	White Red Black
12	1 2 3	White Red Black
13	1 2 3	White Red Sky Blue
14	1 2 3	White Red Black
15	1 2 3	Red Green Black
16	1 2	Red Black
17	1 2 3	Yellow Red Black
18	1 2	Red Black
19	1 2 3	Red White Black
20	1 2 3	Red Silver Black

Fig.	Order of sewing	Embroidery thread color
21	1 2 3	White Red Sky Blue
22	1 2 3	Red Yellow Black
23	1 2 3	Sky Blue Yellow Black
24	1 2 3	White Yellow Black
25	1 2 3	Red Yellow Black
26	1 2 3	White Sky Blue Black
27	1 2 3	Yellow White Brown
28	1 2 3	Silver Red Black
29	1 2 3	White Red Black
30	1 2 3	Sky Blue Red Black

Patterns which are stored in the machine or on (standard/optional) memory cards are for home use only. These patterns are not to be used for any activity other than home use.

* This is a recommendation only. You are free to choose any other color thread.

One point mark 2 embroidery pattern

<Embroidering times: 2 - 25 min.>

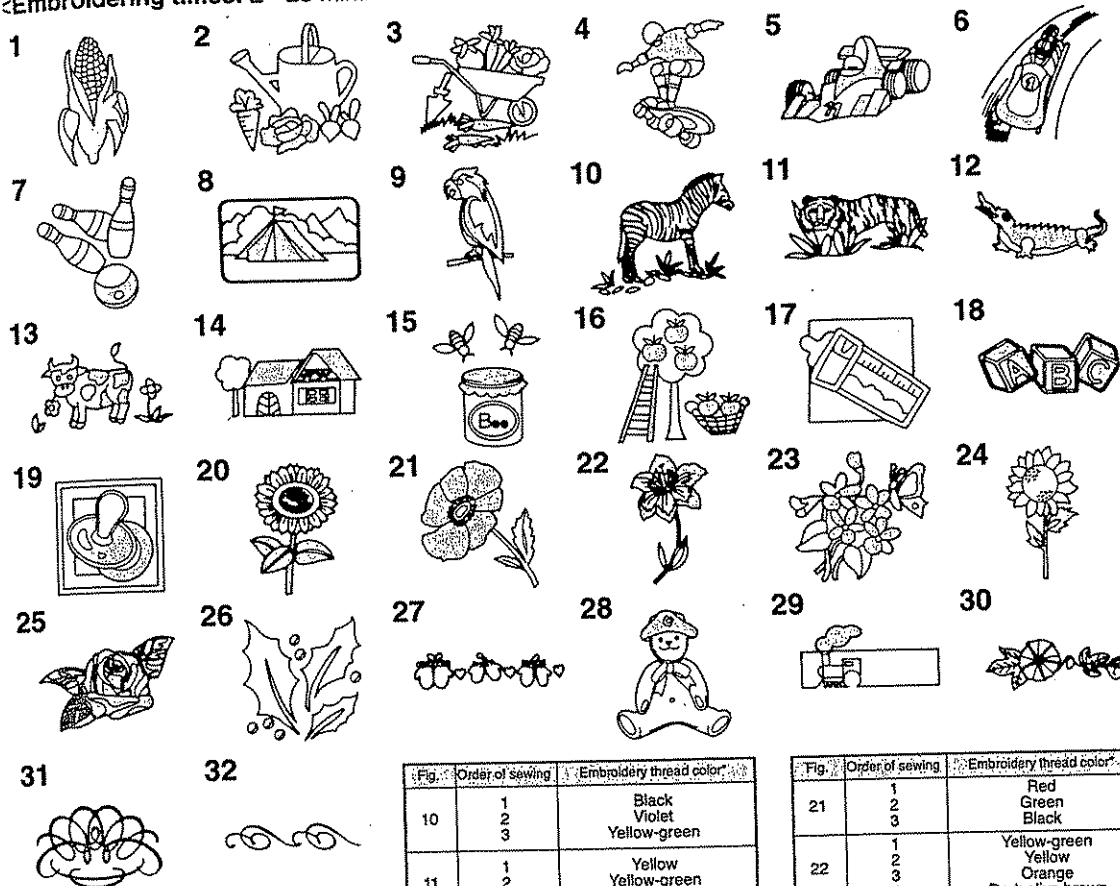


Fig.	Order of sewing	Embroidery thread color*
1	1 2 3	Yellow Purple Green
2	1 2 3 4	Orange Vermillion Green Black
3	1 2 3	Red Yellow-green Green
4	1 2 3	Vermillion Blue Black
5	1 2	Red Black
6	1 2 3 4	Red Green Black Sky Blue
7	1 2 3 4	Blue Yellow Red Black
8	1 2 3 4 5	Red Orange Blue Yellow-green Black
9	1 2 3	Vermillion Blue-green Yellow

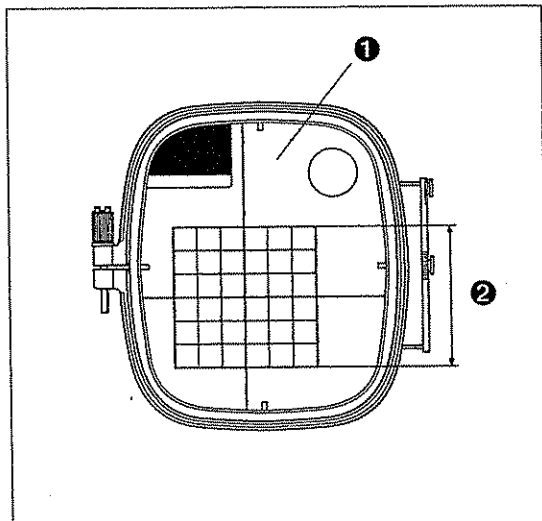
Fig.	Order of sewing	Embroidery thread color*
10	1 2 3	Black Violet Yellow-green
11	1 2 3	Yellow Yellow-green Black
12	1 2 3	Red Ocher Yellow-green
13	1 2 3 4	White Red Black Yellow-green
14	1 2 3 4	White Red Green Black
15	1 2 3 4	Yellow Aquamarine Pink Black
16	1 2 3	Yellow-green Red Black
17	1 2 3	Yellow Aquamarine Pink
18	1 2 3 4	Yellow Red Green White
19	1 2 3	Dark pink Yellow Violet
20	1 2 3 4	Green Orange Yellow Dark olive brown

Fig.	Order of sewing	Embroidery thread color*
21	1 2 3	Red Green Black
22	1 2 3 4	Yellow-green Yellow Orange Dark olive brown
23	1 2 3	Orange Blue-green Purple
24	1 2 3	Brown Orange Moss green
25	1 2 3 4 5	Vermillion Red Yellow-green Green Moss green
26	1 2 3 4 5	Yellow-green Moss green Green Red Olive brown
27	1 2 3 4 5	Sky Blue Yellow Violet Claret Vermillion
28	1 2 3 4 5	Dark pink Pink Violet Ocher Olive brown
29	1 2	Yellow Purple
30	1 2 3 4 5	Yellow Aquamarine Violet Yellow-green Moss green
31	1 2	Olive brown Silver
32	1	Olive brown

* This is a recommendation only. You are free to choose any other color thread.

EMBROIDERING USING A SMALL FRAME (OPTIONAL)

Embroidering items such as handkerchiefs and collars



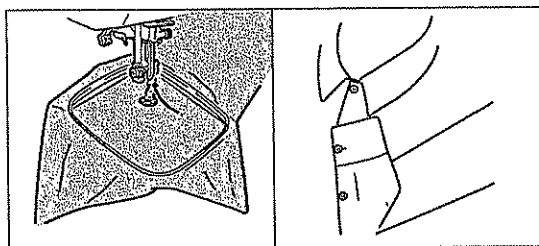
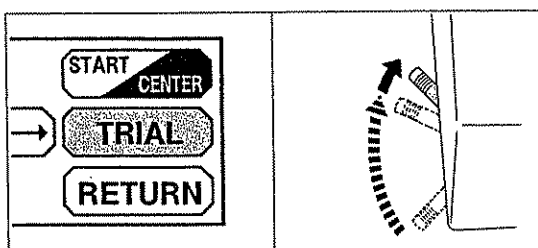
If the accessory frame is too large to hold the fabric to be embroidered, you can use the optional small frame. With the small patterns good results can be obtained by using a small frame.

- ① Embroidery sheet
- ② Embroidering range (Maximum)
Height: 60 mm (2-3/8")
Width: 60 mm (2-3/8")

NOTE

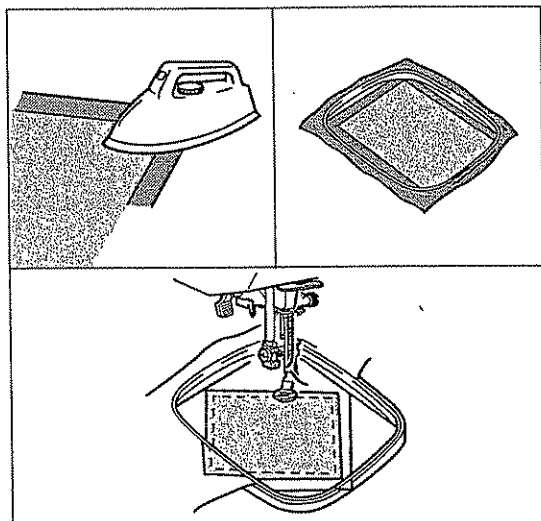
If a small frame is being used, please check the following points.

1. If you do not change the position of the pattern on the "LAYOUT" screen, check that the embroidering area for the pattern selected is within 60 mm (2-3/8") in height and width by touching the "LAYOUT" key. If it is, the pattern can be embroidered correctly.
2. If you change the position of the pattern on the screen using the "Up", "Down", "Left" and "Right" arrow keys, it may not be possible to embroider the pattern correctly even though the embroidering area for the pattern is within 60 mm (2-3/8") in height and width. It is recommended that you use the "TRIAL" function before embroidering. To do this, set both the needle and the presser foot lever to their highest positions, and then touch the "TRIAL" key.



Embroidering handkerchiefs and sleeves

Set the handkerchief into the small frame. You can use the rotation function to move the needle to the desired embroidering location.

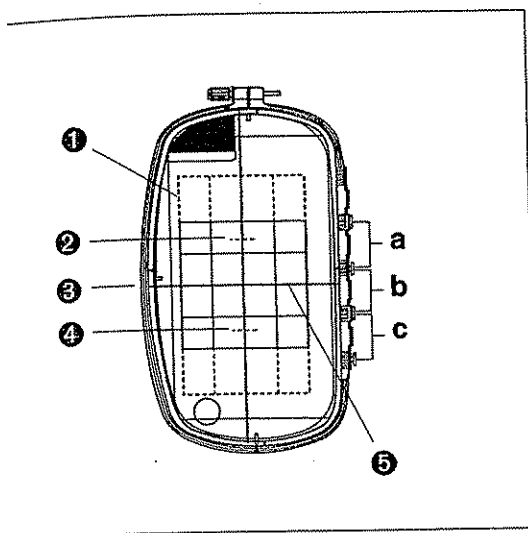


Embroidering items which won't fit into the frame

For items which won't fit into the frame, baste or iron a piece of stabilizer fabric onto the part to be embroidered, and then place the entire piece into the frame together with the fabric to be embroidered.

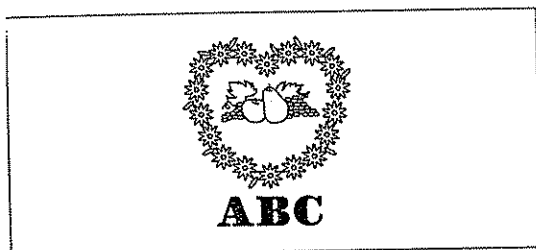
EMBROIDERING USING THE LARGE FRAME (OPTIONAL)

Embroidering range

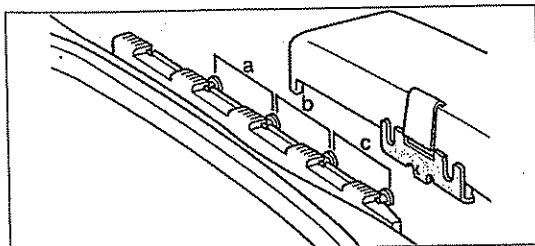


- ① Embroidering range
17.2 × 10 cm
(6-11/16" × 4")
- ② Center when frame is clamped in position "a".
- ③ Center when frame is clamped in position "b".
- ④ Center when frame is clamped in position "c".
- ⑤ Reference line

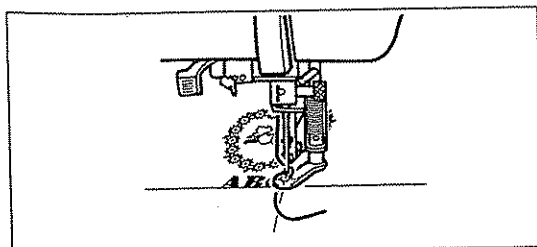
Combining patterns in the height direction



1. If the overall height is within 17.2 cm (6-11/16"), you can embroider the respective patterns simply by changing the clamping position of the frame.

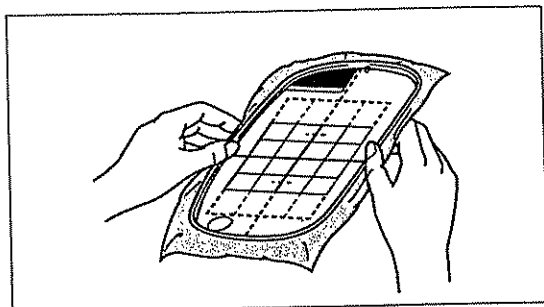
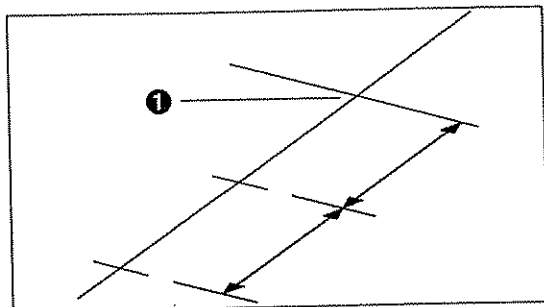
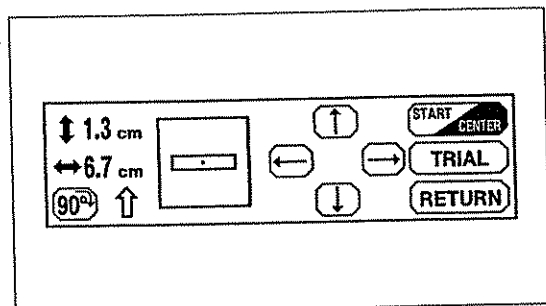
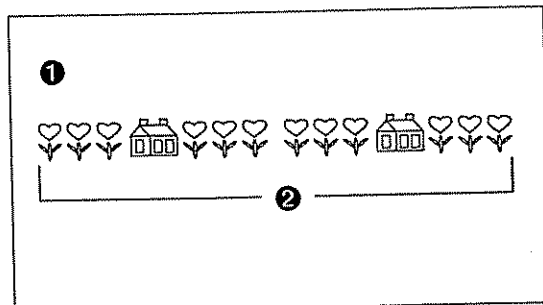


2. Once the pattern at the top has been embroidered, move the clamp from position "a" to position "b" or position "c".



3. Embroider the pattern at the bottom.

Linking two or more embroidered patterns (using the 360° turning feature)



Example: Patterns in Flower card (No. 2)

1. Check the lengths of the patterns you wish to embroider continuously by touching "LAYOUT". If the length is within 17.2 cm (6-11/16"), you can proceed with embroidering just by changing the embroidery location, without having to re-set the fabric in the frame.

- ① Finished appearance
- ② Within 17.2 cm (6-11/16")

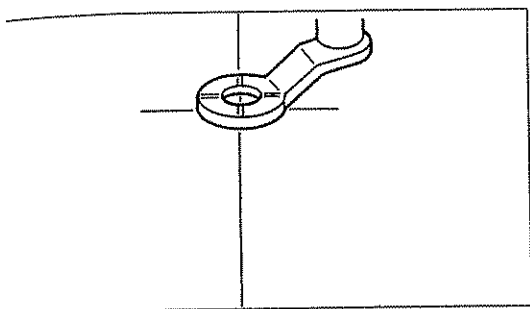
After selecting the pattern, touch "LAYOUT" to check the size of the pattern. The size of the pattern is displayed on the left side on the screen.

2. Draw a line on the fabric marking the place where the patterns will be embroidered. Find the center line, and then draw the line along the whole length of the pattern, marking it off into two even lengths. Mark the embroidery start position with a cross by drawing another line across this line.

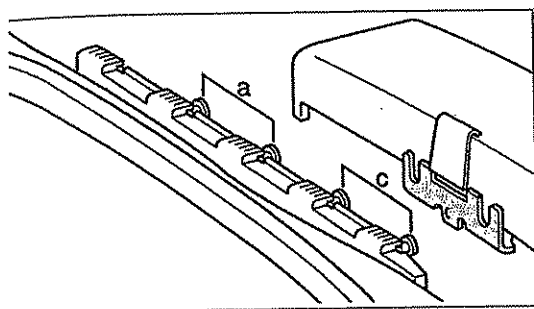
- ① Embroidery start position

3. Align the line on the fabric with a line on the embroidery sheet, and fit the fabric and embroidery sheet into the frame. Clamp the frame with the carriage at the place indicated by "a". (see next page)

4. After touching "LAYOUT", touch "90° clockwise" to change the arrow in the display so that it points to the right. Then touch "START/CENTER" to set the current needle position as the embroidery start position.

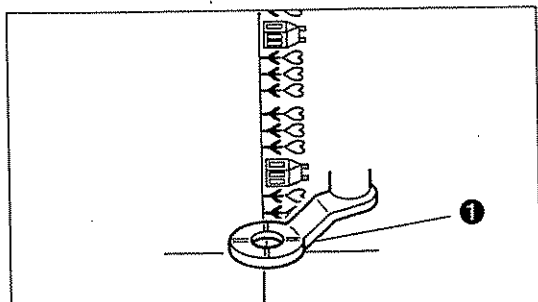


5. Use the "Up", "Right", "Down" and "Left" arrow keys to move the needle to the embroidery start position, and then start embroidering.



6. Move the frame to the place indicated by "c" and clamp it again with the carriage.

7. Embroider the next pattern. If using the same pattern, go straight ahead and start embroidering. If using a different pattern, select the new pattern.
After touching "LAYOUT", touch "90° clockwise" to change the arrow in the display so that it points to the right. Then touch "START/CENTER" to set the current needle position as the embroidery start position.



8. Use the "Up", "Right", "Down" and "Left" arrow keys to move the needle to the previous embroidery end position, and then continue embroidering.

- ① Previous embroidery end