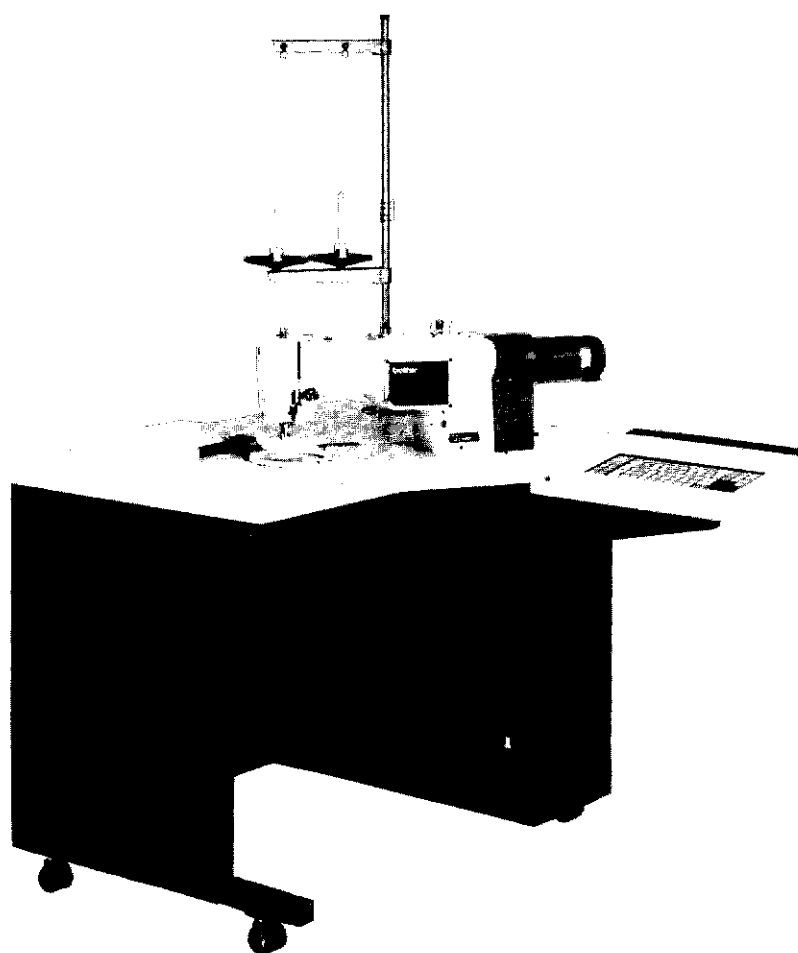


brother

INSTRUCTION MANUAL

BAS-400

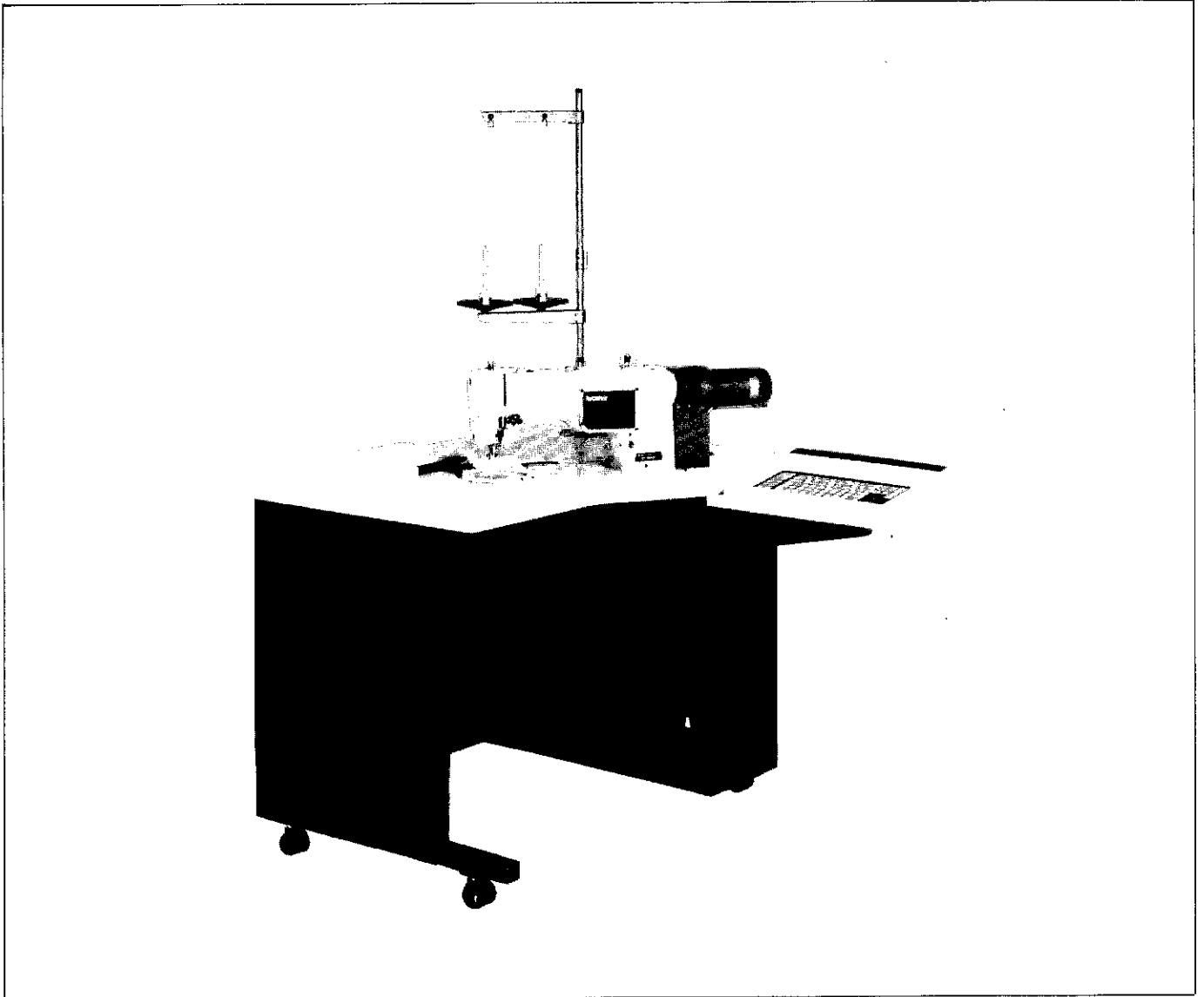


ELECTRONIC MONOGRAMMING MACHINE

BROTHER INDUSTRIES, LTD.

NAGOYA, JAPAN

FEATURES

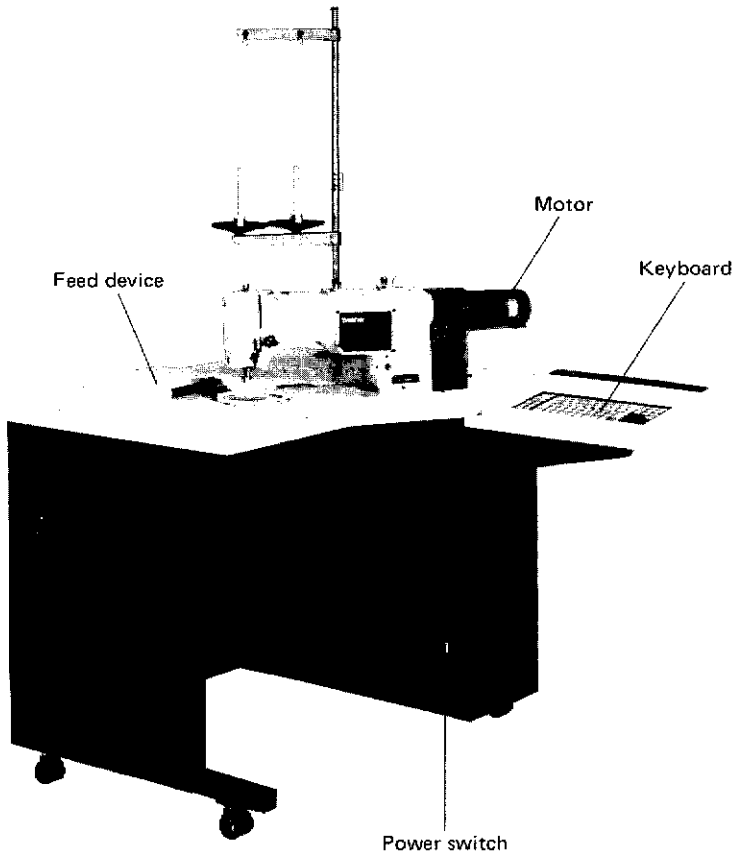


- ★ The development of the BAS-400 model sewing machine is the result of extensive research by Brother engineers.
It was developed as an ideal machine for the monogramming of names.
 - This machine can be operated even by beginners; names are monogrammed by simply pressing a button.
 - The enlargement, reduction, reversal, spacing, etc., of the alphabet can be freely selected.
 - After the data has been programmed, the word or name can be confirmed on the display.
- ★ Needle bearings are used for the thread take-up and the needle bar connecting link, resulting in excellent durability.

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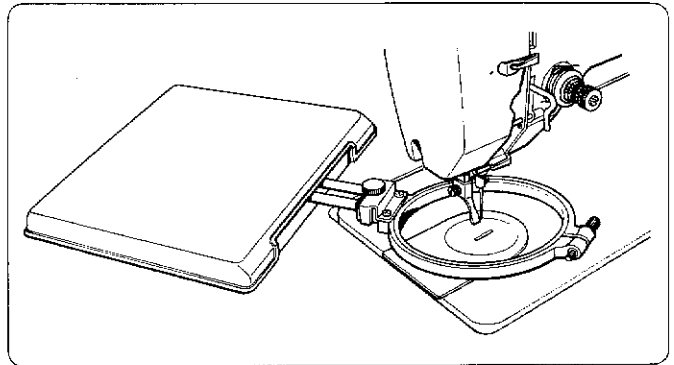
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NAMES OF MAJOR COMPONENTS

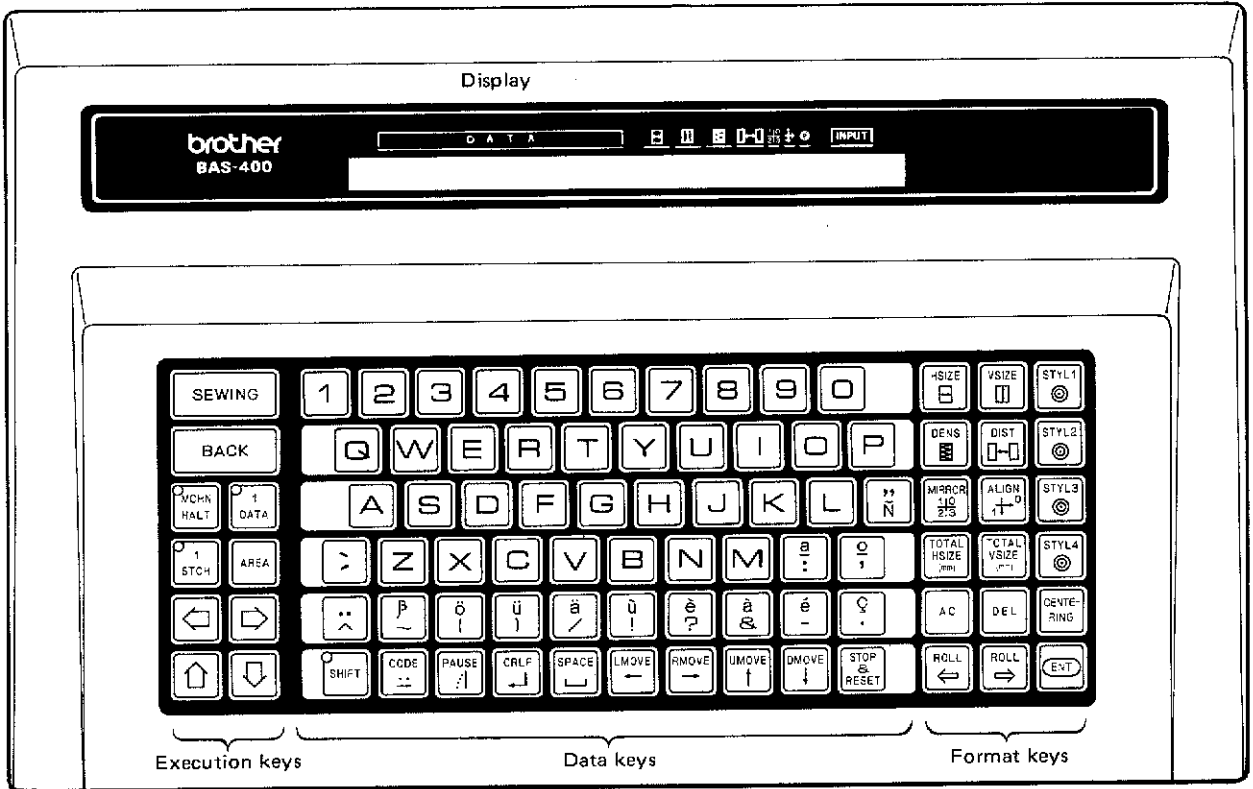


Sewing machine used	LE2-B860 (with rotary hook compensating device and broken-thread detector)
Stitching style	Single-needle lock stitch zig-zag
Stitching speed	1,000 spm max.
Zig-zag width	0 ~ 12 mm
Cloth table range of movement	100 x 100
Drive motor	DC motor, pulse motor
Machine dimension	Width 950 mm Length 740 mm Height 800 mm

< Presser section >



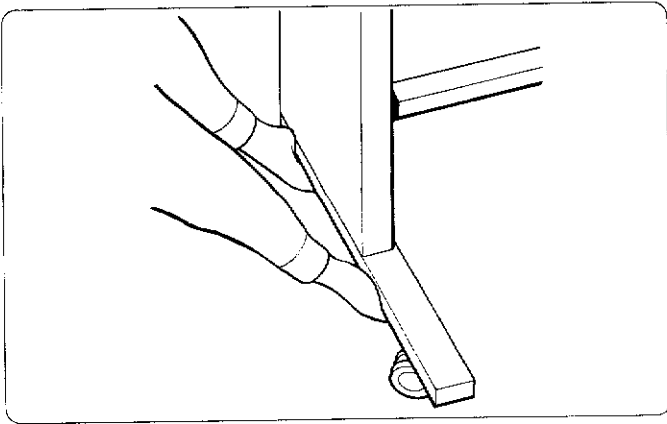
< Keyboard >



Do not use thinner-type solvents for cleaning.

INSTALLATION

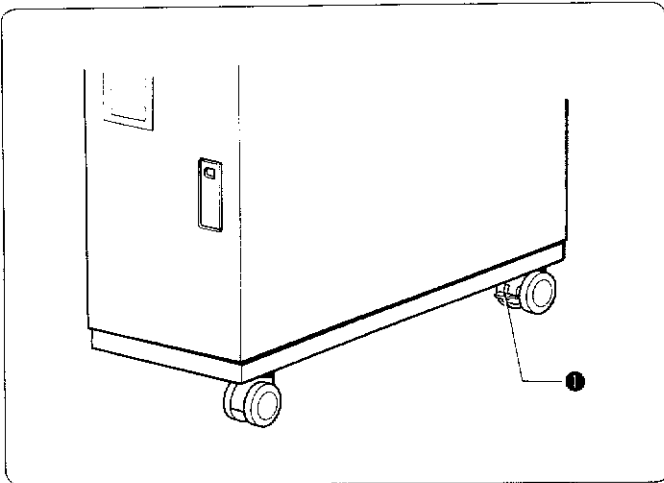
1 Transporting and moving the unit



★ When lifting the unit, pick it up by lifting the frame itself.

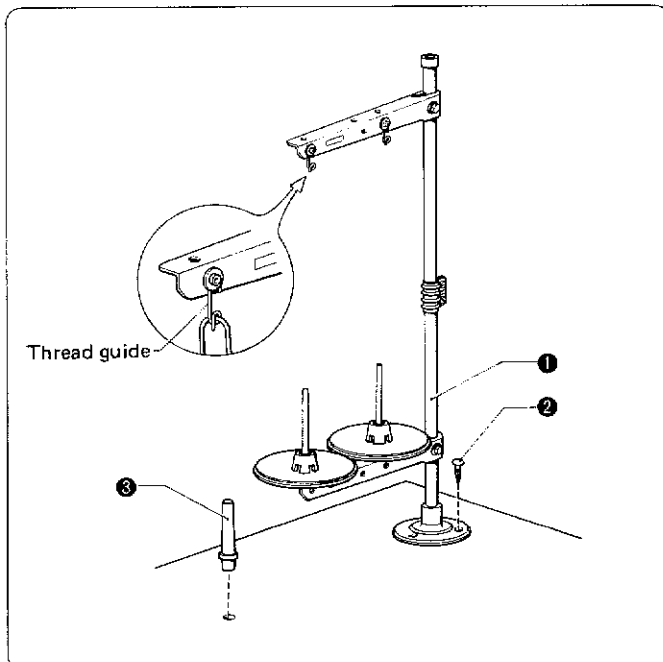
Do not attempt to lift by lifting the table.

2 Positioning the unit



★ When the unit has been set in the appropriate location, lock the casters ① to prevent it from moving.

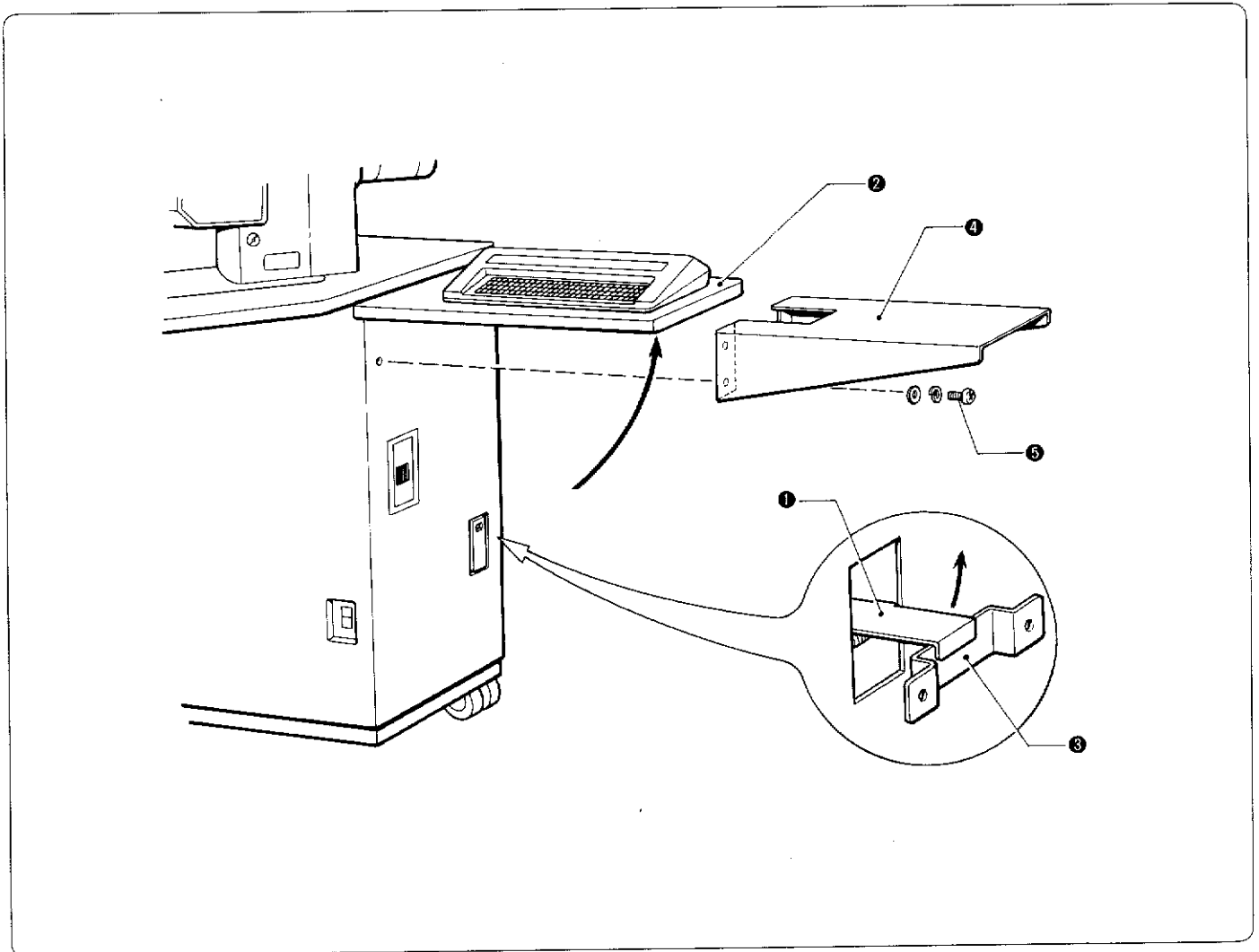
3 Installing the spool stand



1. Use the roundhead screws ② to attach the assembly base ① to the far right corner of the table.

2. Tape the machine head support ③ into position in the hole provided in the table.

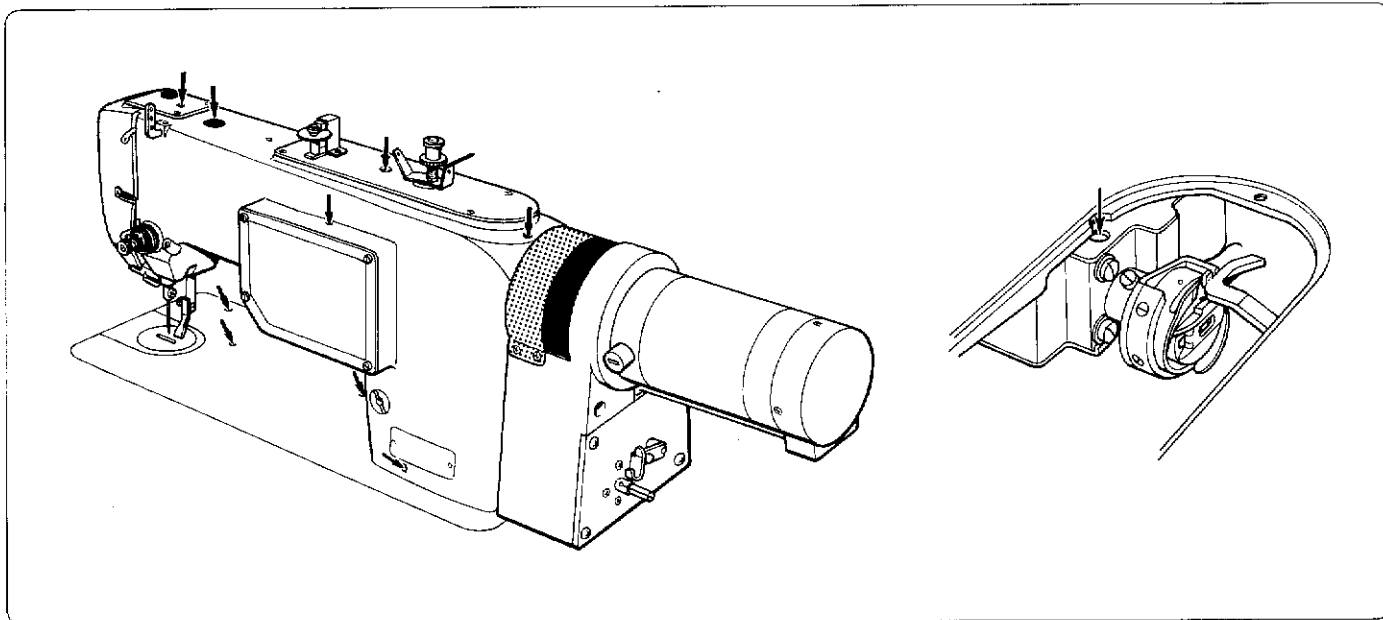
4 Assembling the keyboard



1. Remove the stopper ③ of the keyboard base ② from the stopper holder ① .
 2. Lift the keyboard base ② in the direction indicated by the arrow.
 3. Use the four screws ⑤ to install the keyboard base support ④ .
 4. Confirm that the keyboard base is firmly attached.
- ※ When folding the keyboard base, follow the above procedure in reverse order.

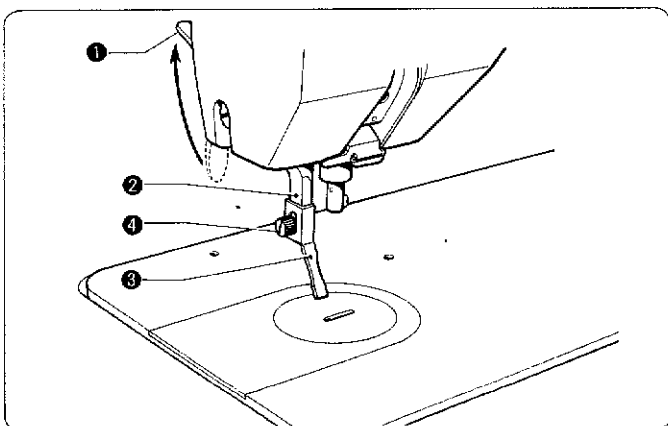
OILING

★ Apply 1~2 drops of oil into each of the places indicated by arrows before using the machine.



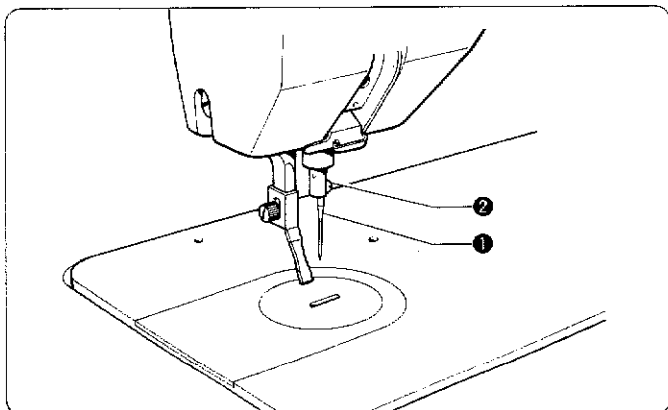
CORRECT OPERATION

1 Installing the presser foot



1. Use the presser lever ① to raise the presser bar ② .
2. Use the screw ④ to install the presser foot ③ onto the presser bar ② .
Use the screw ④ to adjust the presser foot ③ so that when the presser foot ③ is lowered, it slightly touches the material to be sewn.

2 Installing the needle

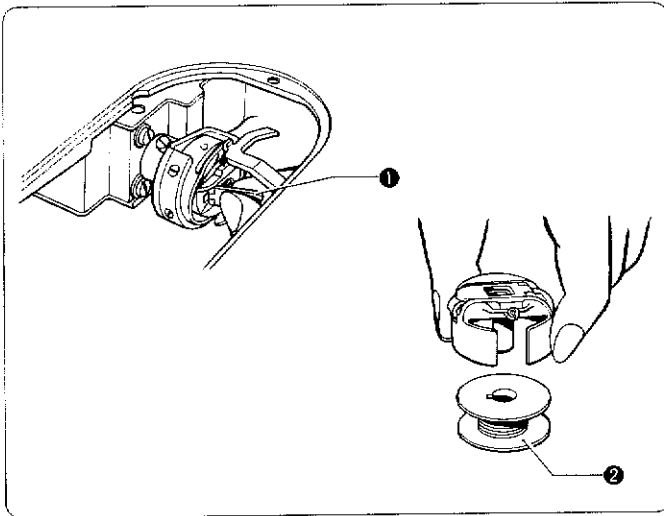


- ★ Hold the needle ① so that its long groove faces toward the front of the machine, insert the needle all the way in, and then tighten the screw ② .

Monogramming applications	Needle, needle gauge
Handkerchiefs Dress shirts Towels	DB x 1 #9 ~ #11
Denim Leather Hide	DB x 1 #11 ~ #14

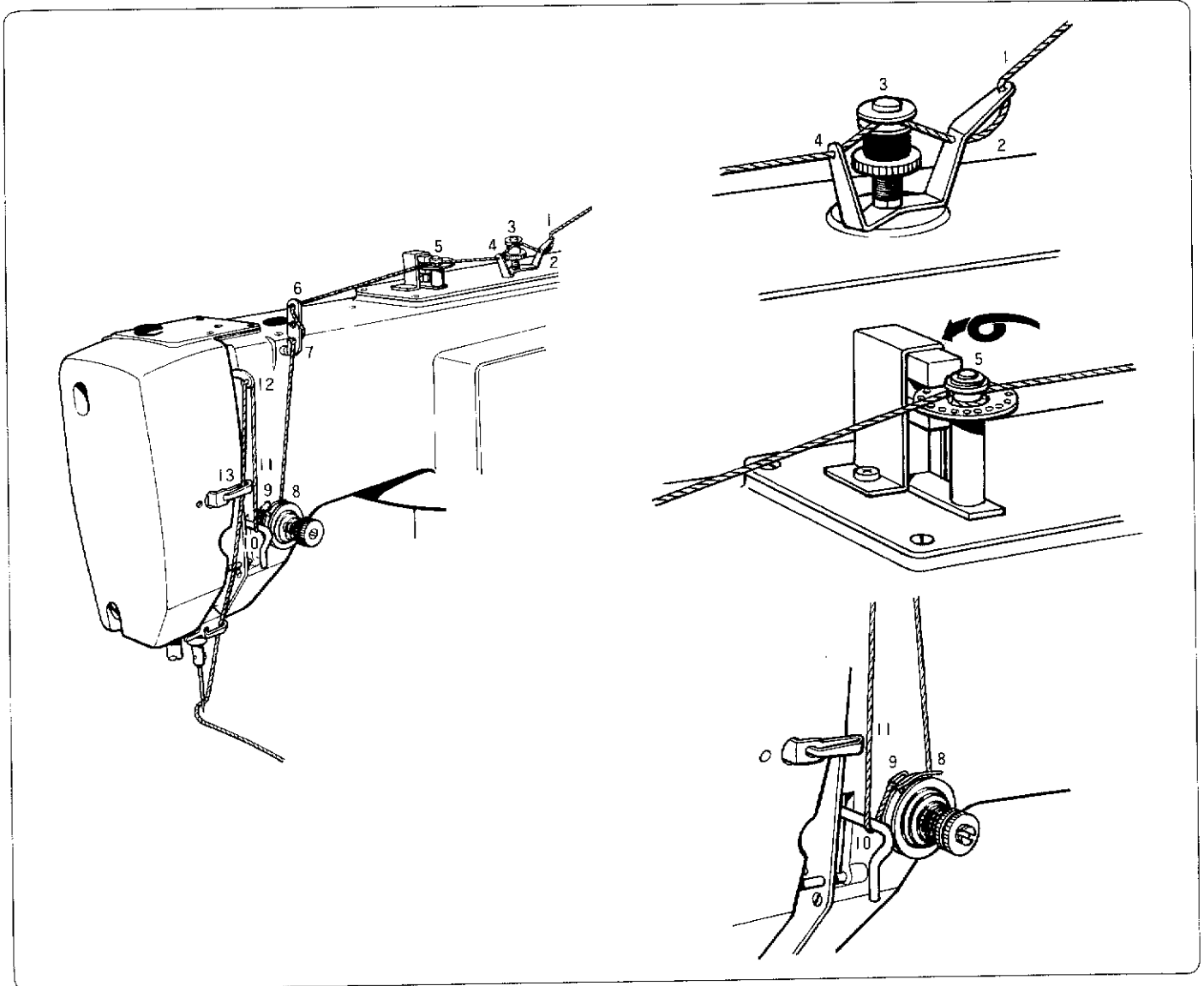
◎ For special types of thread (gold, silver, lamé, etc.), use a large-diameter needle (#14 ~ #16) to ensure good stitching performance.

3 Removing the bobbin case

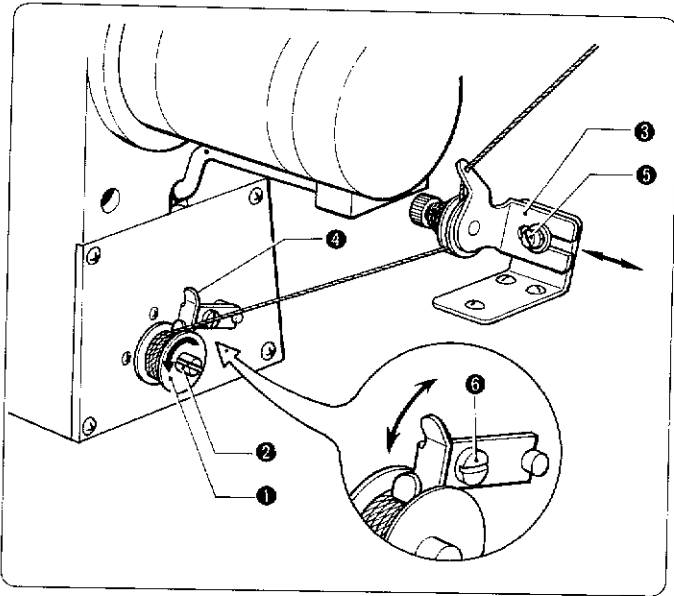


1. Raise the needle to its maximum height.
2. Grasp the latch of the bobbin case ① and remove the bobbin case.
(The bobbin ② will be detached when the bobbin case latch is released.)

4 Upper threading



5 Winding the lower thread

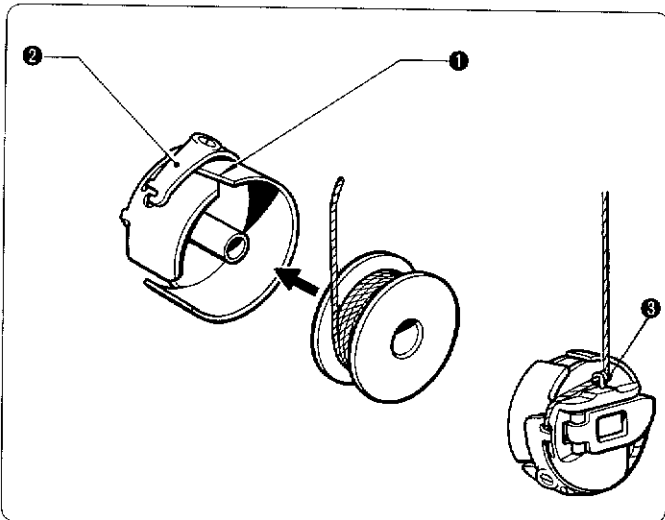


1. Turn on the power.
2. Slide the bobbin ① onto the bobbin winder shaft ②.
3. Pass the thread through the thread guide ③.
4. Wind a few turns of thread onto the bobbin ① in the direction indicated by the arrow.
5. Press the bobbin stop latch ④.

※ If the thread cannot be wound evenly, loosen the screw ⑤ and adjust by moving the thread guide ③ to the left or right.

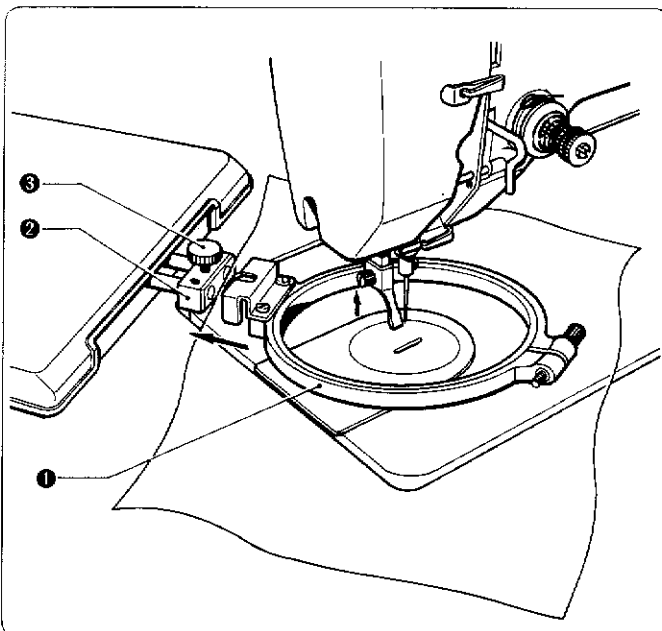
In order to wind more thread onto the bobbin, loosen the screw ⑥, and move the bobbin stop latch ④ accordingly.

6 Threading the bobbin case



1. Insert the bobbin into the bobbin case.
2. Pass the thread through the slot ① and under the tension spring ②.
3. Pull the thread out of the hole of the tension spring ② and pass it through the thread guide ③.
4. Pull the end of the thread until approximately 50 mm of thread has been drawn out.

7 Installing the monogram frames



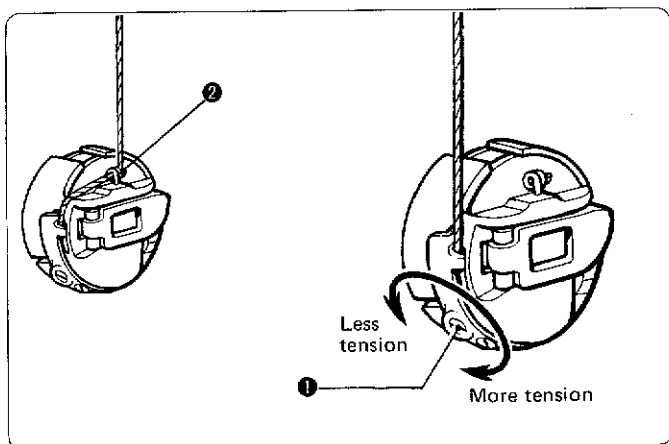
1. Use the presser lifter lever to raise the presser foot.
2. Fix the sewing material onto the monogram frame ①.
3. Pass the monogram frame ① under the needle and presser foot, secure it by the holder ②, and then firmly tighten the screw ③.

※ Fix the sewing material onto the monogram frame ① in such a way that the inner frame and outer frame will not accidentally come apart.

※ If the sewing material is not secured properly, it may cause stitches to be skipped, the thread to be cut, the material to become bunched.

8 Thread tension

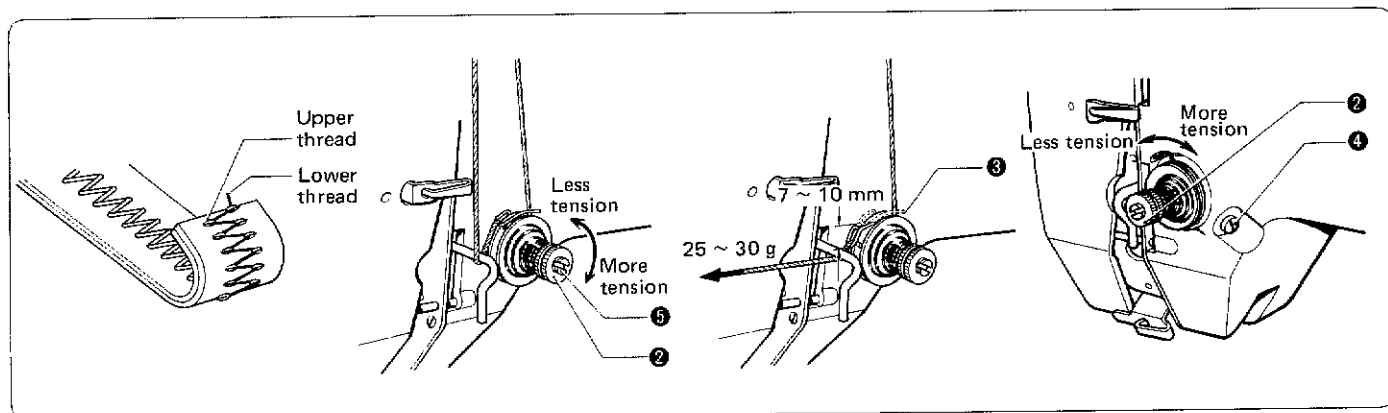
1. Lower thread tension



★ The correct lower thread tension varies according to the sewing material and the type of thread used. Adjust the lower thread tension by turning the lower thread tension screw ① so that when the bobbin case is suspended from the lower thread by holding the thread end, there is just enough tension to allow the bobbin case to slide down the thread by its own weight.

※ After adjusting, pass the lower thread through the thread guide ②

2. Upper thread tension



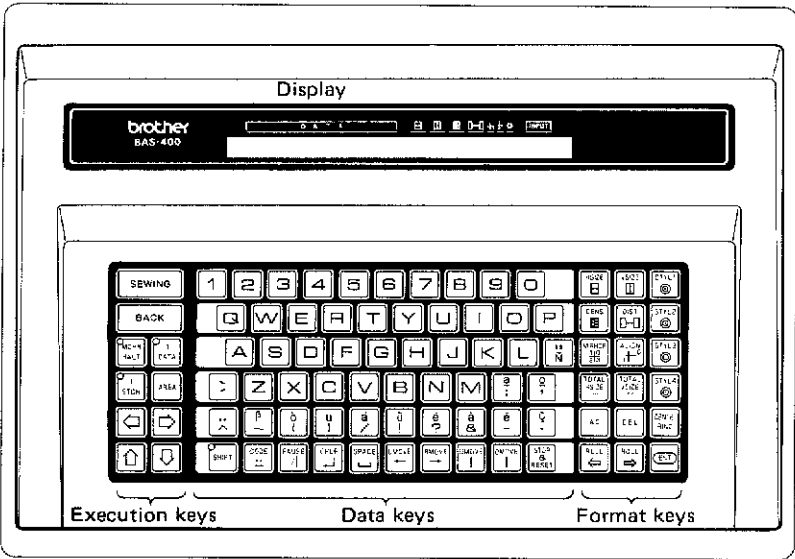
★ Adjust the tension of the upper thread by turning the upper thread tension screw ② so that the upper thread passes through to the reverse side of the sewing material and the lower thread protrudes to the extent of 1/3 of the width.

< Thread take-up spring >

- An operating range of 7 ~ 10 mm is standard for the thread take-up spring ③ .
- A tension strength of 25 ~ 30g is standard for the thread take-up spring ③ .
- To adjust the operating range of the thread take-up spring, loosen the screw ④ , and turn the upper thread tension screw ② .
- To adjust the tension of the thread take-up spring, place the end of a screwdriver into the groove of the thread tension shaft ⑤ and turn the shaft accordingly.


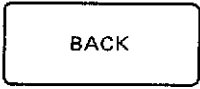




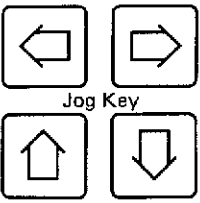
KEYBOARD EXPLANATION

★ In this explanation, the expression "move the needle" is used.
In actuality, however, it is the cloth feed that moves rather than the needle.



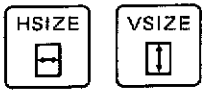




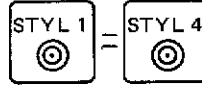
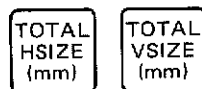





Execution keys . . . These keys are used to command the monogramming operation.
Data keys These keys are used to input stitching data.
Format keys These keys are used to determine data format.
Display This display indicates the stitching data and the format data.

1 Execution keys

1.  This key is used to start the machine to begin monogramming.
2.  This key is used to reset the needle to the starting position.
3.  This key is used to stop the machine rotation, and to put the machine into a mode in which only the feed continues to operate. *Position TEST (Arret Rotation Machine)*
4.  This key is used to produce one letter at a time.
When a jog key is pressed while the LED is illuminated, the needle moves 0.2 mm.
Position lettre par lettre
5.  This key is used to execute the program one stitch at a time. When a jog key is pressed while the LED is illuminated, the needle moves 1 mm. *Position (Point par Point)*
6.  This key is used to establish the sewing area.
(Refer to the section on "Establishing the area" on page 11.)
7.  These keys are used to move the position of the needle.
(The needle will move in the direction of the arrows.)
After the sewing area has been established, the needle will only be able to move within the established range.

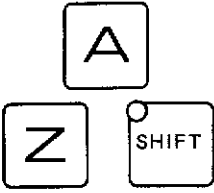


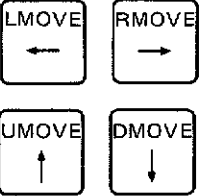


※ If one of the keys from 3 ~ 5 above is pressed, the lamp will illuminate. In order to cancel the command, press the key once again. The lamp will then cease to illuminate. The commands of these keys can also be received during machine operation.

② Format keys




1.  These keys are used to enlarge or reduce the size of letters. Information is input by applying a ratio of enlargement or reduction to the standard data.
The input capacity ranges from a ratio of 0.1 ~ 9.9. (Refer to page 12.)
The standard size of letters memorized by this system differs according to the letter and the letter style; however, capital letters are approximately 10 x 10 mm and small letters 7 x 8 mm.
2.  The standard thread density is approximately 5 threads/mm (a ratio of 1.0).
Use this key to increase or decrease the thread density.
The input capacity ranges from a ratio of 0.1 ~ 4.0. (Refer to page 12.)
3.  The standard spacing between letters is input to be 0 mm.
Use space the letters 1 mm apart, input 1.0.
To space the letters 1 mm apart, input 1.0.
The input capacity ranges from a ratio of 0.0 ~ 9.9. (Refer to page 12.)
4.  Use this key to produce a mirror image (reversal) of a letter on the horizontal or vertical axis. (Refer to page 13.)
As shown in the illustration, input the number 1 to produce a mirror image on the vertical axis, the number 3 for a mirror image on the horizontal axis, and the number 2 for a mirror image on the vertical and horizontal axis (from the needle's point of origin).
5.  Input the number 0 to align the letters horizontally.
Input the number 1 to align the letters vertically. (Refer to page 13.)
6.  Use these keys to select the letter style.
(Refer to the operating instructions included with the disk.)
7.  When these keys are pressed, the overall horizontal or vertical dimensions are shown in the display. (Refer to page 13.)
It is also possible to designate either the horizontal or vertical dimensions and enlarge or reduce their original sizes. When doing this, if the overall horizontal dimension is input in units of mm, the overall vertical dimension is also multiplied or divided by the same ratio and input automatically.
8.  When this key is pressed, all of the data previously input is cancelled.
9.  This key deletes the data to the left of the symbol (◀.◆) in the center of the display.
10.  Use this key in order to confirm or change the data that has been input.
The input data will move in a scrolling motion across the display in the direction indicated by the arrow.
11.  After the numerical keys have been pressed to establish the area, or to input the various codes, or to determine the format, etc., the pressing of this key will enter the appropriate data.
12.  This key is used to designate the center of data which has been input, and to enable the distribution, horizontally or vertically, of the data.
(Refer to page 14.)

③ Data keys —

★ The data keys are arranged in the same order as typewriter keys.

1.  There are 52 letters—26 capital letters and 26 small letters.
When the SHIFT key is pressed, a light illuminates.
The light ceases to illuminate when the SHIFT key is pressed again.
When the light is not illuminated, the unit is set for capital letters; when it is illuminated, the unit is set for small letters.
2.  There are 10 number keys—from 0 ~ 9.
3.  There are 24 special character keys.
4.  The needle moves 1 mm in the direction indicated by the arrow each time one of these keys is pressed.
5.  Each time the SPACE key is pressed, a space of 10 mm is produced.
6.  Use this key in order to change lines.
The standard spacing is 15 mm between lines; the operation is then reset.

© Items 1 ~ 6 above can be changed by format keys 1 ~ 5 described on page 9.

7.  If the PAUSE key is pressed between two data steps, the unit will pause at that position.
In order to restart, press the SEWING key.
8.  If a problem occurs, press this key to perform a self-examination of the cause.
Furthermore, after pressing the CODE key, up to 6 letters (including numbers) can be input to recall any data which was input by means other than the keyboard.
(Use this key when making standard adjustments.)
9.  When the sewing machine is operating, this key is used as the emergency stop key. When data is being entered, or when an error message is displayed, this key is used as the reset key.

※ Furthermore, while the sewing machine is in operation, if any key other than the SEWING key, BACK key, MCHN HALT key, 1 DATA key, or 1 STCH key is pressed, the machine will come to an emergency stop.

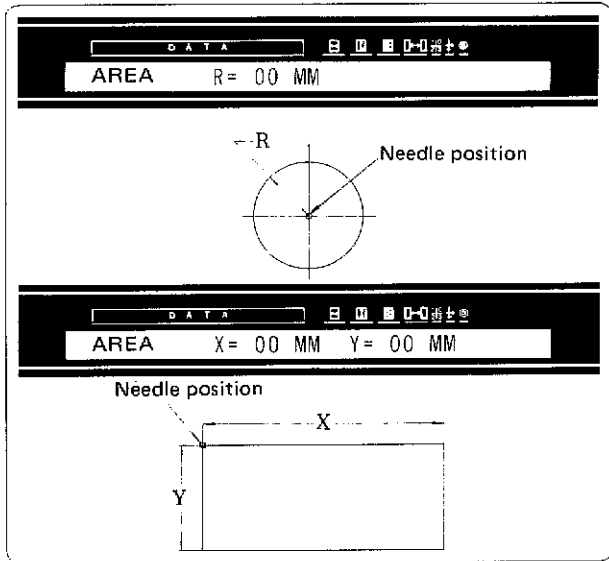
OPERATING PROCEDURE

- ★ Turn on the power.

The "◀" symbol will flicker in the center of the display.

(When the power is turned on, the message "turn the pulley" will be shown in the display. At this time, turn the pulley slowly until the symbol "◀" is shown in the display.)

1 Establishing the area



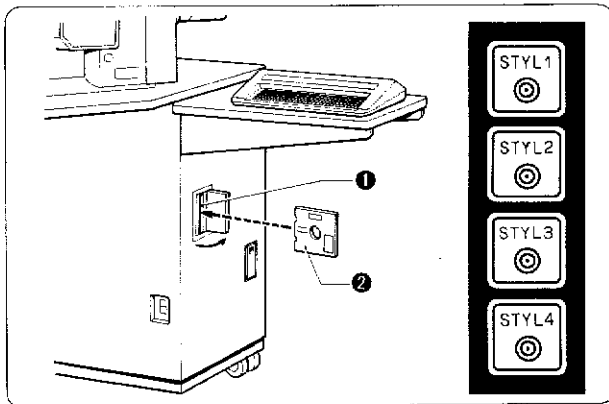
◎ Area input [circle type]

1. When the AREA key is pressed, the message R=00 MM will be shown in the display.
2. Move the needle by pressing the jog keys, and determine the sewing area.
3. Press the alphabet key [R]. Press the number key(s) , and then press the ENT key.

◎ Area input [ellipse-square type]

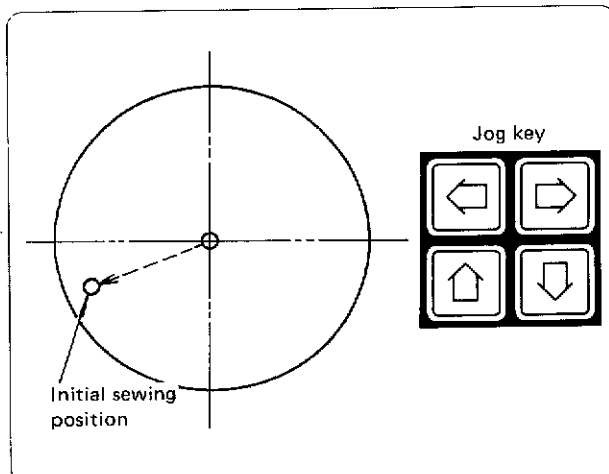
1. Follow steps 1 and 2 of the procedure described.
2. Press the alphabet key [X]. The message "AREA X=00 MM Y=00 MM" will be shown in the display.
3. Press the keys in the following order: the alphabet key [X], the number key(s) , the alphabet key [Y], the number key(s) , and the ENT key. After the area has been established, check it by using the jog keys.

2 Selecting the letter style



1. Open the cover of the floppy disk insertion slot ①, insert the disk ②, and then close the cover securely.
 2. After referring to the instructions on the disk ②, select the desired letter style by pressing the appropriate format key. (The selected letter style will be shown in the display by one of the style symbols, from 1 ~ 4.)
- ※ If the disk ② is not correctly inserted, trouble, such as incorrect data reading, may result.
 - ※ The disk ② is easily affected by magnetism. Do not bring it close to a magnetic source.

3 Inputting data.力

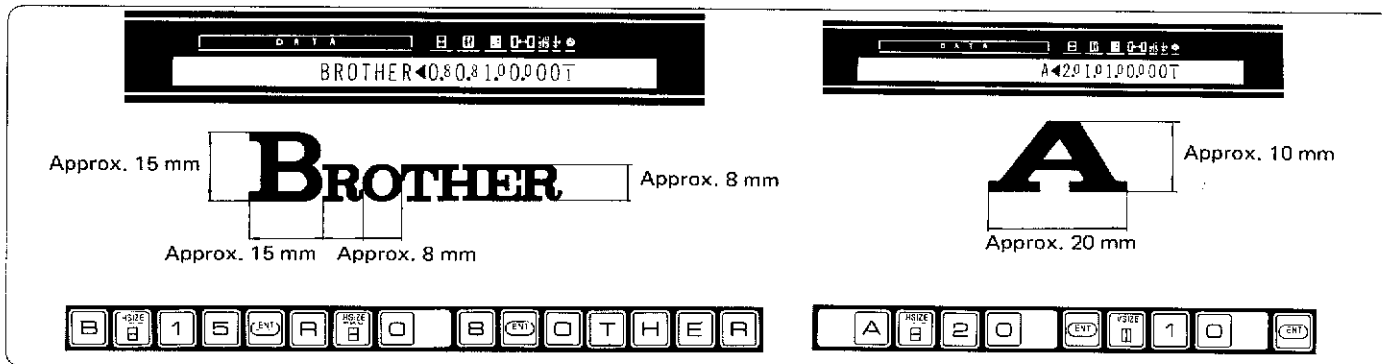


1. Use the jog keys to move the needle to the initial sewing position.
 2. Input the data. When the first data is input a lateral length of 1.0, a vertical length of 1.0, a thread density of 1.0, a spacing of 0.0, a reversing of 0, and an alignment of 0 are automatically input.
 3. For the second and all subsequent data, the values of the preceding data's lateral length, vertical length, thread density, spacing, and alignment are automatically input.
- ※ The maximum number of characters that can be input is 100.
4. However, depending on the entire data amount (including spaces, feed, and special symbols) there are instances where 100 characters cannot be input.

4 Formatting data

◎ The data at the left of the display center marks (◀•◆) can be edited.

A. Enlargement, reduction



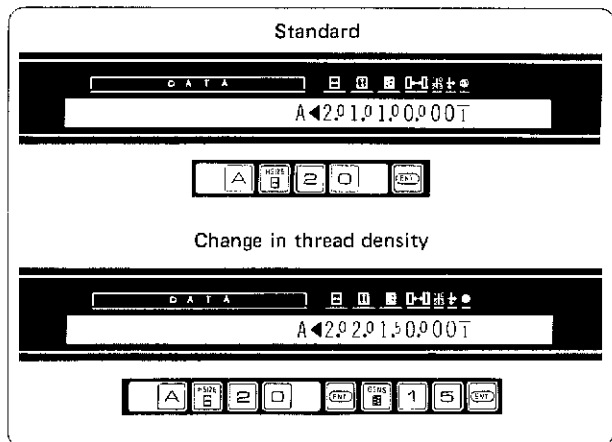
★ In order to enlarge or reduce (a pattern), input the appropriate data characters, press the width (HSIZE) key, and then input the ratio. (Program the height, thread density, and spacing in the same way.) If the width and height are different, program the width first, then the height.

- If a portion of the pattern protrudes beyond the established area as a result of enlarging, that character will flicker on the display. If this occurs, change the initial sewing position, or reduce the enlargement dimensions to correct the problem. (The machine will not begin sewing if the character in the display is flickering.)

Input values for the width and height keys are from 0.1 to 9.9. The input of numerical values outside this range will result in an "error" condition.

※ Characters can be enlarged up to 3 times their normal size, and can be embroidered at 1,000 rpm.

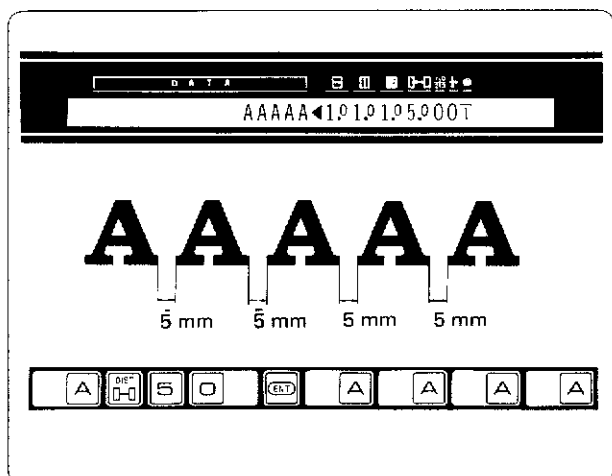
B. Thread density



★ The standard thread density ratio is 1.0 (5 threads/mm). Change the ratio in order to increase or decrease the thread density.

- Thread density input values are from 0.1 to 3.0; the input of numerical values outside this range will result in an "error" condition.

C. Character spacing



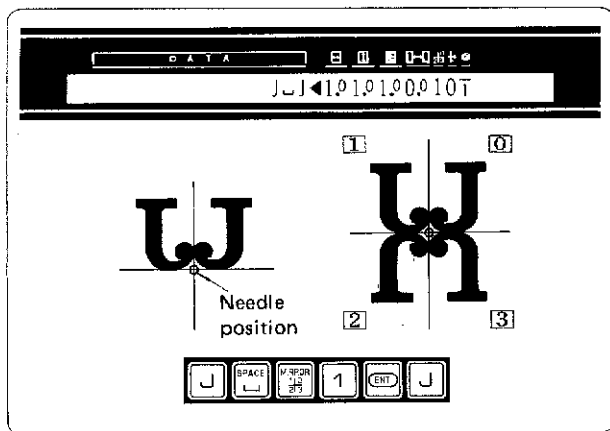
★ Character spacing is input at a ratio of 1 mm. The standard character spacing is 0.0.

[Example]

- ※ Number key [5] x 1 equals a spacing of 5 mm. Character spacing input values are from 0.0 to 9.9.

※ The width, height, thread density and character spacing used above are all in two-digit ratios, but there is no need to input the decimal point; it will be programmed automatically.

D. Mirror reversal



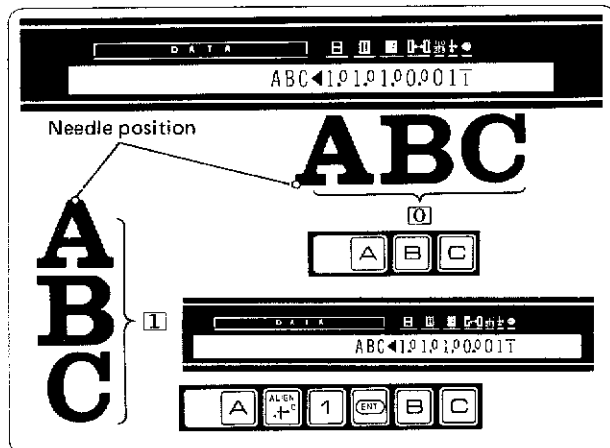
- ★ A reversal of [0] is input as a standard.
- For reversal, press the MIRROR key, and then input the reversal number (number key $\text{[0]} \sim \text{[3]}$).

[Example]

Data should be input in the order shown in the diagram at left.

After pressing the MIRROR key, the input of any key with a number other than $\text{[0]} \sim \text{[3]}$ will result in an "error" condition.

E. Alignment



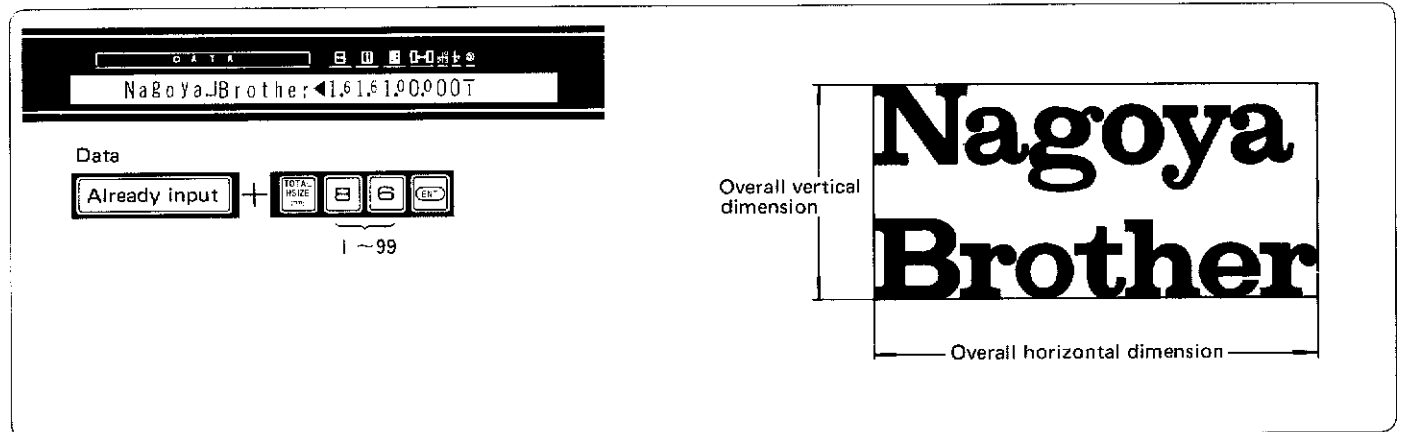
- ★ A lateral alignment of [0] is input as a standard.
- For sewing in a vertical configuration, press the ALIGN key, then input the number [1] .
- For enlargement or reduction in a vertical configuration, input the height dimension; the width and thread density will be programmed automatically.

[Example]

Program by pressing the operation keys in the order shown in the diagram at left.

- After pressing the ALIGN key, the input of any number other than 0 or 1 will result in an "error" condition.

F. Enlargement, reduction of overall dimensions

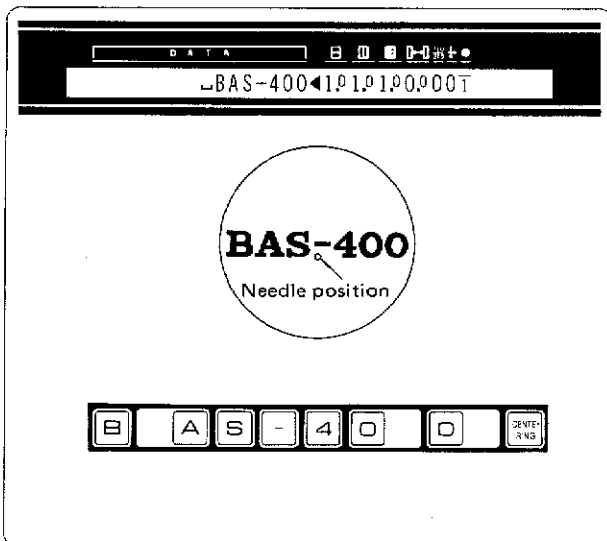


- ★ Enlargement or reduction of the overall dimensions of previously programmed data is possible.
 - When the TOTAL HSIZE key is pressed, the overall horizontal dimension will be shown in the display. (The horizontal portion of the display will flash on and off.)
 - When the overall horizontal dimension is input, the overall vertical dimension is automatically input at the same ratio.
 - Input both the overall horizontal and vertical dimensions in units of mm (1 ~ 99 mm).

※ When enlarging, if the input data will cause the sewing to extend beyond the established area, that data will flicker on the display. If this occurs, change the initial sewing position, or reduce the enlargement dimensions. The input values of the sewing area selection and data editing A–F can be input repeatedly. When the enter key is pressed, the numerical value of that instance is read in to the keyboard.

Example: When a wrong lateral distance is input ([3][0] instead of [2][0]), just input [2][0] again. Then press the enter key after the correct value has been input.

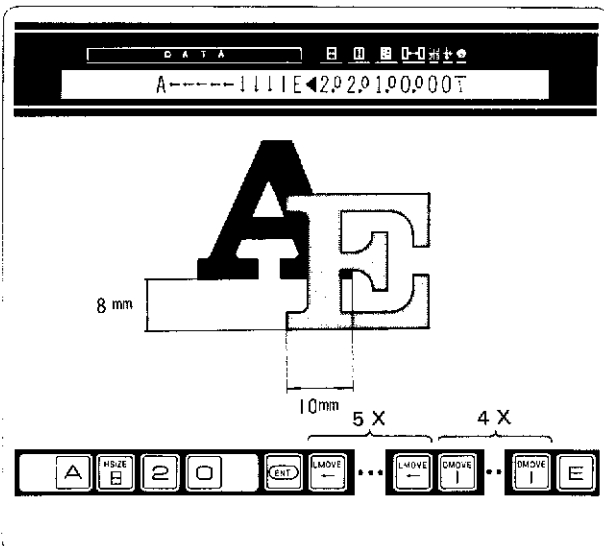
G. Centering



★ Considering the needle position as the point of origin, it is possible to distribute the input data evenly to the left and right.

1. Press the jog key to move the needle to the point of origin (distribution center).
2. Input the data. (At this time, even if the dimensions protrude from the established area and the display is flickering, input all the data.)
3. Press the CENTERING key.
4. Now, if the display is flickering, use the TOTAL HSIZE key, and reduce the dimensions.
Use the same method for a vertical configuration.

H. Overlap sewing



★ When inputting data for overlapping characters, use the "← MOVE" keys.

- Each time the ← MOVE key is pressed, the feed will move 1 mm. Enlargement and reduction can also be done for overlapping characters.

[Example]

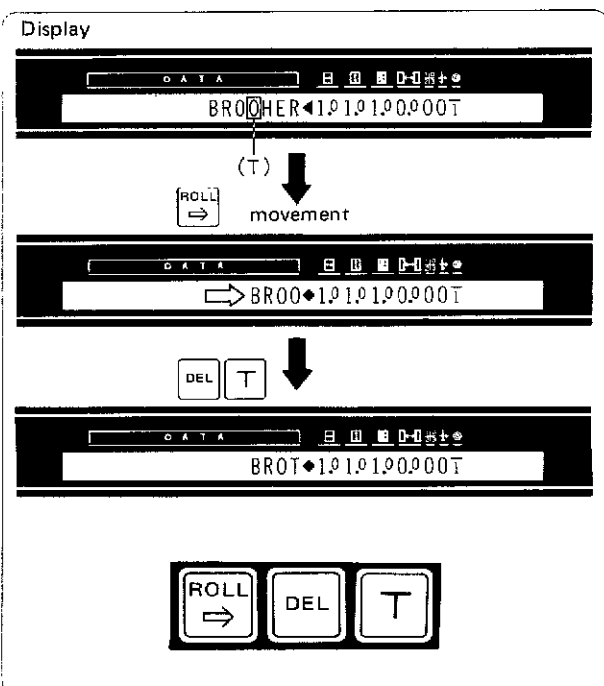
Data is input by pressing the operating keys in the order shown in the diagram at left.

$$1 \text{ mm} \times 2.0 \times 5 = 10 \text{ mm}$$

$$1 \text{ mm} \times 2.0 \times 4 = 8 \text{ mm}$$

- ※ By using the PAUSE key [] , the upper thread (color) can also be changed.

I. Data correction



★ To erase all the data, use the AC key.

★ To erase a part of the data, press the ROLL key to allow the data to move across the display until the character to be erased is to the left of the "◀ · ◆" symbol, and then press the DEL key.

★ To insert data, press the ROLL key to allow the data to move across the display to the desired position for insertion, and then input the data.

★ To revise a part of the data, press the ROLL key to allow the data to move across the display until the data to be revised is to the left of the "◀ · ◆" symbol, and then input the revised data.

Use the ROLL [] key or the RETURN key after the revision in order to display the last part of the input data. If this is not done, the machine will not operate even if the SEWING key is pressed.

5 Sewing operation, etc.

- ★ Make sure that the input data is correct. Then, press the **SEWING** key. When starting, hold the end of the upper thread lightly with your left hand.
 - To stop the sewing machine rotation and allow only the feed to move, press the **MCHN HALT** key. [TEST]
 - To implement the data one step at a time, press the **1 DATA** key.
The data can also be reversed one step at a time. (Press the **BACK** key after pressing the **1 DATA** key.)
 - To sew one stitch at a time, press the **1 STCH** key.
It is also possible to reverse one stitch at a time. (Press the **BACK** key after pressing the **1 STCH** key.)
 - If the upper thread breaks, the sewing machine will stop automatically. Replace the thread, back up a few stitches by using the **1 STCH** and **BACK** buttons; and then press the **SEWING** button again.
- ◎ When reversing one data step or one stitch at a time, the order of instructions is followed in reverse. However, when resetting (using the **BACK** key), the needle travels the shortest path back to the starting point. Therefore, it is not possible to press the **STOP** key halfway and restart from that point; the needle must return all the way back to the starting point.
 - If any abnormality is noticed during operation, press the **STOP** key immediately to stop the sewing machine. (When any key other than the data keys, format keys, **SEWING** key, **BACK** key, **MCHN HALT** key, **1 DATA** key, or **1 STCH** key is pressed during operation, the machine will come to a stop.)
 - If an error message is displayed, or if the warning buzzer sounds, press the **RESET** key.
Consult the Table of Error Messages in this manual, and then correct the data accordingly.

6 Table of Error Messages

Error Message	Cause	Remedy
Disk handling error	Disk improperly inserted	Insert disk correctly.
	Insertion slot cover opened during operation	
Faulty disk	Scratches, dirt, or undesirable magnetic influence on disk	Replace disk.
Input error	Input of numerical values outside permissible range	Input data correctly.
	SEWING key was pressed after reset interruption	Avoid pressing SEWING key.
Data overload	Input data exceeds 100 characters	Divide the data.
	Overflow of interior data region	
Excessive stitch number	Data was input which caused an excess number of stitches in a character	Decrease thread density of the affected character.
Needle position under cloth	Needle position is beneath cloth.	Raise needle position above the cloth.
Overload	Sewing machine motor stopped due to overload	Inspect sewing machine.
Hardware error ※	Problem in control system	Contact your service representative.
Emergency stop	STOP key, data key, or format key pressed during machine operation.	
Broken thread	Upper thread broken during machine operation	Back up a few stitches, and then restart.
Improper machine positioning	Machine head not properly seated on top of table	Seat the machine head correctly.

※ The three lamps (MCHN HALT, 1 DATA, and 1 STCH) will flash, and all machine functions will stop.
(Turn off the power.)

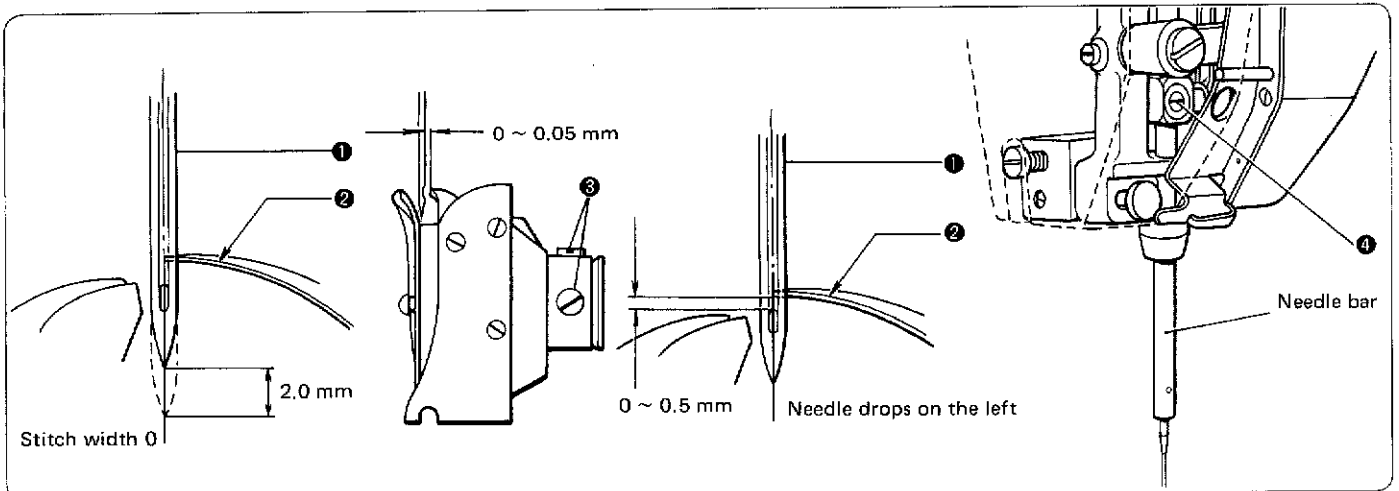
Display flickers	Cause	Remedy
All display data flickers	Needle bar not in center Caution 1	Using the BACK key, return needle bar to center.
	All stitching data protrudes from established area Caution 1	Move initial sewing position, or reduce size of data.
Part of stitch data flickers	Part of stitching data protrudes from established area Caution 2	Change initial sewing position, or reduce size of data.
Needle touches monogram frame	Error in determining area Caution 2	Correct the area determination.


Caution 1: If the SEWING key is pressed in this condition, the error message, "Needle bar not in center", will be displayed.
Caution 2: If the SEWING key is pressed in this condition, the error message, "Area over", will be displayed.
When the RESET key is pressed after the error message is displayed, the message, "check display", will be displayed, and the format value may be changed automatically.

STANDARD ADJUSTMENTS

★ Turn the power on before making these standard adjustments.

1 Needle and rotary hook timing



Perform the adjustments described below while in the following conditions: Generate an error on purpose, press the code key , and display the message "Self analysis-start" on the screen.

⊙ Adjustment of needle and rotary hook timing

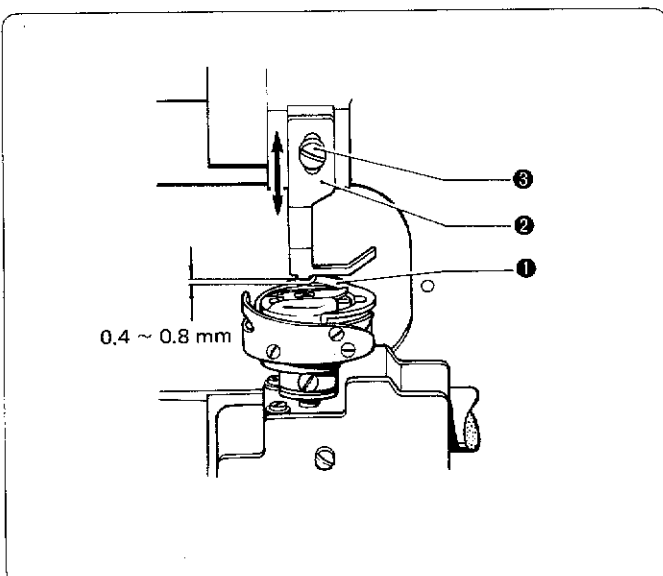
- Press the number key **0** ; the amplitude will then become zero.
- Rotate the machine pulley toward yourself. When the needle **1** is located 2 mm above its lowest position, the tip of the rotary hook **2** must be aligned with the center of the needle.
If it is not, loosen the set screws **3** , and align correctly.
- Adjust so that the clearance between the needle **1** and the tip of the rotary hook **2** is between 0 ~ 0.05 mm.

⊙ Needle bar height

- Press the number key **1** . This will result in maximum amplitude.
- Rotate the machine pulley toward yourself; the needle **1** will move to the left side.
When the tip of the rotary hook **2** and the center of the needle are aligned, the interval between the upper ridge of the needle hole and the lower edge of the rotary hook tip must be between 0 ~ 0.5 mm.
If this is not the case, move the needle bar to its lowest position, loosen the set screw **4** , and adjust by moving the needle bar **5** up or down.

To clear the amplitude setting, press the RESET key.

2 Clearance between the rotary hook and rotary hook bracket.



- The standard clearance between the rotary hook **1** and the rotary hook bracket **2** is 0.4 ~ 0.8 mm.
- Loosen the screw **3** , and move the rotary hook bracket **2** back or forth to adjust.

TROUBLESHOOTING GUIDE

Trouble	Cause	Check Point	Remedy	Page
Upper thread breaks	Thread too thick for needle	Needle and thread	Refer to section on "Installing the needle".	4
	Inner monogram frame is floating above needle plate	Inner and outer monogram frames not properly engaged	Install inner and outer frames properly.	/
	Not holding end of upper thread lightly in left hand when starting to sew		Hold end of upper thread lightly in left hand when starting to sew.	/
	Insufficient cloth tension		Increase cloth tension.	/
	Incorrect meeting of needle and tip of rotary hook	Rotary hook timing	Adjust rotary hook timing.	19
	Scratched rotary hook	Scratch in surface of rotary hook thread slide	Polish with a buff.	/
			Replace rotary hook.	/
	Needle is bent		Replace the needle.	4
	Needle incorrectly installed	Direction of long groove	Refer to section on "Installing the needle".	4
	Scratches in threadway		Polish with a buff.	/
Upper thread incorrectly threaded	Threading	Refer to section on "Threading the needle".	5	
Bobbin does not rotate properly	Scratch on bobbin flange	Replace the bobbin.	/	
Tip of rotary hook is dull	Wear in tip of rotary hook	Replace the rotary hook.	/	
Skipped stitched	Incorrect meeting of needle and tip of rotary hook	Rotary hook timing	Adjust rotary hook timing.	19
	Needle is bent		Replace the needle.	4
	Clearance between needle and tip of rotary hook is too wide	Needle clearance	Adjust clearance between needle and tip of rotary hook.	19
	Thread too thick for needle	Needle and thread	Refer to section on "Installing the needle".	4
	Needle incorrectly installed	Direction of long groove	Refer to section on "Installing the needle".	4

G - PROM normal
H - PROM speciale (on peut changer le zig zag)

brother[®]