Please read this manual before using the machine. Please keep this manual within easy reach for quick reference.

AUTOMATIC DRAPERY PLEATING MACHINE
Thank you very much for buying a BROTHER sewing machine. Before using your new machine, please read the safety instructions below and the explanations given in the instruction manual.

With industrial sewing machines, it is normal to carry out work while positioned directly in front of moving parts such as the needle and thread take-up lever, and consequently there is always a danger of injury that can be caused by these parts. Follow the instructions from training personnel and instructors regarding safe and correct operation before operating the machine so that you will know how to use the machine correctly.


SAFETY INSTRUCTIONS

1 Safety indications and their meanings

This instruction manual and the indications and symbols that are used on the machine itself are provided in order to ensure safe operation of this machine and to prevent accidents and injury to yourself or other people. The meanings of these indications and symbols are given below.

Indications

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>DANGER</strong></td>
<td>The instructions which follow this term indicate situations where failure to follow the instructions will almost certainly result in death or severe injury.</td>
</tr>
<tr>
<td><strong>CAUTION</strong></td>
<td>The instructions which follow this term indicate situations where failure to follow the instructions could cause injury when using the machine or physical damage to equipment and surroundings.</td>
</tr>
</tbody>
</table>

Symbols

- ............... This symbol ( △ ) indicates something that you should be careful of. The picture inside the triangle indicates the nature of the caution that must be taken. (For example, the symbol at left means “beware of injury”.)

- ............... This symbol ( ○ ) indicates something that you must not do.

- This symbol ( ● ) indicates something that you must do. The picture inside the circle indicates the nature of the thing that must be done. (For example, the symbol at left means “you must make the ground connection”.)
## 2 Notes on safety

### DANGER

- Wait at least 5 minutes after turning off the power switch and disconnecting the power cord from the wall outlet before opening the face plate of the control box. Touching areas where high voltages are present can result in severe injury.

### CAUTION

#### Environmental requirements

<table>
<thead>
<tr>
<th>⚠️ Use the sewing machine in an area which is free from sources of strong electrical noise such as high-frequency welders. Sources of strong electrical noise may cause problems with correct operation.</th>
<th>⚠️ The ambient temperature should be within the range of 5°C to 35°C during use. Temperatures which are lower or higher than this may cause problems with correct operation.</th>
</tr>
</thead>
<tbody>
<tr>
<td>⚠️ Any fluctuations in the power supply voltage should be within ±10% of the rated voltage for the machine. Voltage fluctuations which are greater than this may cause problems with correct operation.</td>
<td>⚠️ The relative humidity should be within the range of 45% to 85% during use, and no dew formation should occur in any devices. Excessively dry or humid environments and dew formation may cause problems with correct operation.</td>
</tr>
<tr>
<td>⚠️ The power supply capacity should be greater than the requirements for the sewing machine's electrical consumption. Insufficient power supply capacity may cause problems with correct operation.</td>
<td>⚠️ Avoid exposure to direct sunlight during use. Exposure to direct sunlight may cause problems with correct operation.</td>
</tr>
<tr>
<td>⚠️ The air supply should have a capacity greater than the machine air consumption. If air is not supplied sufficiently, a machine malfunction may occur.</td>
<td>⚠️ In the event of an electrical storm, turn off the power and disconnect the power cord from the wall outlet. Lightning may cause problems with correct operation.</td>
</tr>
</tbody>
</table>

#### Installation

<table>
<thead>
<tr>
<th>⚠️ Machine installation should only be carried out by a qualified technician. Contact your Brother dealer or a qualified electrician for any electrical work that may need to be done.</th>
<th>⚠️ Be sure to wear protective goggles and gloves when handling the lubricating oil and grease, so that they do not get into your eyes or onto your skin, otherwise inflammation can result. Furthermore, do not drink the oil or eat the grease under any circumstances, as they can cause vomiting and diarrhoea. Keep the oil out of the reach of children.</th>
</tr>
</thead>
<tbody>
<tr>
<td>⚠️ The sewing machine weighs more than 200 kg. The installation should be carried out by two or more people.</td>
<td>⚠️ Avoid setting up the sewing machine near sources of strong electrical noise such as high-frequency welding equipment. If this precaution is not taken, incorrect machine operation may result.</td>
</tr>
<tr>
<td>⚠️ Do not connect the power cord until installation is complete, otherwise the machine may operate if the start switch is pressed by mistake, which could result in injury.</td>
<td>⚠️ Be sure to connect the ground. If the ground connection is not secure, you run the risk of receiving a serious electric shock.</td>
</tr>
<tr>
<td>⚠️ Be sure to connect the ground. If the ground connection is not secure, you run the risk of receiving a serious electric shock.</td>
<td>⚠️ Have two people present to hold the machine head with both their hands when tilting it back or returning it to its original position.</td>
</tr>
</tbody>
</table>
### CAUTION

#### Sewing

- This sewing machine should only be used by operators who have received the necessary training in safe use beforehand.
- The sewing machine should not be used for any applications other than sewing.
- Be sure to wear protective goggles when using the machine. If goggles are not worn, there is the danger that if a needle breaks, parts of the broken needle may enter your eyes and injury may result.
- Attach all safety devices before using the sewing machine. If the machine is used without these devices attached, injury may result.
- Turn off the power switch at the following times, otherwise the machine may operate if the start switch is pressed by mistake, which could result in injury:
  - When not using the machine
  - When leaving the machine unattended
- Do not touch any of the moving parts or press any objects against the machine while sewing, as this may result in personal injury or damage to the machine.
- If an error occurs in machine operation, or if abnormal noises or smells are noticed, immediately turn off the power switch. Then contact your nearest Brother dealer or a qualified technician.
- If the machine develops a problem, contact your nearest Brother dealer or a qualified technician.

#### Cleaning

- Turn off the power switch before starting any cleaning work, otherwise the machine may operate if the start switch is pressed by mistake, which could result in injury.
- Be sure to wear protective goggles and gloves when handling the lubricating oil and grease, so that they do not get into your eyes or onto your skin, otherwise inflammation can result. Furthermore, do not drink the oil or eat the grease under any circumstances, as they can cause vomiting and diarrhoea. Keep the oil out of the reach of children.

#### Maintenance and inspection

- Maintenance and inspection of the sewing machine should only be carried out by a qualified technician.
- Ask your Brother dealer or a qualified electrician to carry out any maintenance and inspection of the electrical system.
- Turn off the power switch and disconnect the power cord from the wall outlet at the following times, otherwise the machine may operate if the start switch is pressed by mistake, which could result in injury:
  - When carrying out inspection, adjustment and maintenance
  - When replacing consumable parts such as the rotary hook and knife
- Disconnect the air hoses from the air supply and wait for the needle on the pressure gauge to drop to "0" before carrying out inspection, adjustment and repair of any parts which use the pneumatic equipment.
- If the power switch and air need to be left on when carrying out some adjustment, be extremely careful to observe all safety precautions.
- Use only the proper replacement parts as specified by Brother.
- If any safety devices have been removed, be absolutely sure to re-install them to their original positions and check that they operate correctly before using the machine.
- Any problems in machine operation which result from unauthorized modifications to the machine will not be covered by the warranty.
- Have two people present to hold the machine head with both their hands when tilting it back or returning it to its original position.
Warning labels

The following warning labels appear on the sewing machine. Please follow the instructions on the labels at all times when using the machine. If the labels have been removed or are difficult to read, please contact your nearest Brother dealer.

1

⚠️ CAUTION

Moving parts may cause injury.
Operate with safety devices.
Turn off main switch before threading, changing bobbin and needle, cleaning etc.

Safety devices: Thread take-up cover, Needle guard, Belt cover, Guard bar, etc.

2

⚠️ DANGER ⚠️ GEFAHR ⚠️ DANGER ⚠️ PELIGRO

Hazardous voltage will cause injury.
Turn off main switch and wait 5 minutes before opening this cover.

3

⚠️ 注意 作動するフィーダーで、けがをする。フィーダ作業中は手を近づけないこと。

Feeder may cause injury.
Do not put hands in feeder traveling path.

4

⚠️ 注意 ⚠️ ACHTUNG ⚠️ 注意 ⚠️ ATENCION

Heated cover may burn hands.
Do not touch when operating.

5

⚠️ 警告 ⚠️ WARNING

ベルトにまきこまれ、けがをする。開口部に手などを入れないこと。

Running belt can cause injury.
Do not put hands in opening.
Chapter 1. Preparation of Embroidery Machine

1. Specifications

2. Names of machine components

3. Preparation

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3-2. Connecting the power table and the device
3-3. Connecting the cords
3-4. Installing the pleating device operation panel
3-5. Connecting the foot switch
3-6. Connecting the power cord
3-7. Supplying the air
3-8. Lubrication

4. Preparation for Embroidering

4-1. Selecting the needle and thread
4-2. Installing the needle
4-3. Threading the upper thread
4-4. Winding the lower thread
4-5. Replacing the bobbin case and threading the thread

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1-3. Using the program R/W (Read/Write) switch
1-4. Using the TEST switch (Checking the sewing pattern)
1-5. Adjusting the sewing SPEED control
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# Chapter 1. Preparation of Embroidery Machine

## 1. Specifications

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<thead>
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<th>Specification</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stitch formation</td>
<td>Single needle lock stitch</td>
</tr>
<tr>
<td>Sewing machine</td>
<td>Lock stitch, pattern tacking sewing machine (with large shuttle hook)</td>
</tr>
<tr>
<td>Maximum pattern size</td>
<td>Max. 130 mm x 60 mm</td>
</tr>
<tr>
<td>Maximum stitch number</td>
<td>Max. 20,000</td>
</tr>
<tr>
<td>Stitch length</td>
<td>0.1 - 12.7 mm</td>
</tr>
<tr>
<td>Maximum sewing speed</td>
<td>Fixed-length sewing 2,000 rpm, bar tacking 1,200 rpm (Maximum 2,500 rpm)</td>
</tr>
<tr>
<td>Feed mechanism</td>
<td>Intermittent feed, pulse motor drive</td>
</tr>
<tr>
<td>Rotary hook</td>
<td>Shuttle hook (Standard rotary hook is sold separately)</td>
</tr>
<tr>
<td>Needle</td>
<td>DP 17</td>
</tr>
<tr>
<td>Data storage method</td>
<td>3.5 floppy disk 2HD/1.44MB, 2DD</td>
</tr>
<tr>
<td>Test function</td>
<td>Operation test function provided for use with low speed drive</td>
</tr>
<tr>
<td>Wiper device</td>
<td>Standard equipment (However, cannot be used for heavy materials)</td>
</tr>
<tr>
<td>Thread trimmer device</td>
<td>Standard equipment</td>
</tr>
<tr>
<td>Work clamp height</td>
<td>for pneumatic Max. 34 mm</td>
</tr>
<tr>
<td>Work clamp lift stroke</td>
<td>18 mm</td>
</tr>
<tr>
<td>Intermittent stroke</td>
<td>3 (Factory default 6mm) - 8 mm</td>
</tr>
<tr>
<td>Ruffle girth</td>
<td>Two folds or Three folds</td>
</tr>
<tr>
<td>Fold height</td>
<td>12 mm - 35 mm (Some heights within this range may not be possible due to the type of material being sewn.)</td>
</tr>
<tr>
<td>Ruffle spacing</td>
<td>65 mm - 180 mm</td>
</tr>
<tr>
<td>Ruffling of pleats</td>
<td>3 - 99</td>
</tr>
<tr>
<td>Material width</td>
<td>60 cm - 999 cm</td>
</tr>
<tr>
<td>Finished width</td>
<td>30 cm - 750 cm</td>
</tr>
<tr>
<td>Side hem</td>
<td>15 mm - 50 mm</td>
</tr>
<tr>
<td>Lining width</td>
<td>50 mm, 75 mm, 90 mm</td>
</tr>
<tr>
<td>Safety devices</td>
<td>Automatic stop function for activation in the event of misoperation realized with intermediate stop function and safety circuits</td>
</tr>
<tr>
<td>Weights</td>
<td>Sewing machine and power table set: approx. 125 kg.</td>
</tr>
<tr>
<td></td>
<td>Pleating device: approx. 130 kg</td>
</tr>
<tr>
<td>Power supply</td>
<td>Single-phase 110V, 220V, 240V, 3-phase 220V, 380V, 400V, 415V, 600VA</td>
</tr>
<tr>
<td>Air pressure</td>
<td>0.49 MPa</td>
</tr>
<tr>
<td>Air consumption</td>
<td>30 N /min</td>
</tr>
<tr>
<td>Machine dimensions</td>
<td>1,300 W 1,400 D 1,200Hmm</td>
</tr>
</tbody>
</table>
2. Names of machine components

1. Power switch
2. Control box
3. Operation panel
4. Motor
5. Spool stand
6. Belt cover
7. Floppy drive
8. Emergency stop switch
9. Thread wiper switch
10. Solenoid valve
11. Ruffling device panel
12. Upper cover
13. Guard cover
14. Needle guard
15. Foot switch 1
16. Foot switch 2
17. Foot switch 3
18. Reset switch
19. Clamp
20. Dimension correction sensor
21. Folding plate upper
22. Folding plate under
23. Folding plate rotation cylinder
24. Folding plate retract cylinder
25. Pleat feeding-out plate
26. Pleat retainer needle
27. Dip switch
3. Preparation

<table>
<thead>
<tr>
<th>CAUTION</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Installation</strong></td>
</tr>
</tbody>
</table>

- Machine installation should only be carried out by a qualified technician.
- Contact your Brother dealer or a qualified electrician for any electrical work that may need to be done.
- The sewing machine head weighs more than 200 kg. The installation should be carried out by two or more people.
- Do not connect the power cord until installation is complete, otherwise the machine may operate if the foot switch is depressed by mistake, which could result in injury.
- Be sure to connect the ground. If the ground connection is not secure, you run the risk of receiving a serious electric shock.
- Hold the machine head with both hands when tilting it back or returning it to its original position. Furthermore, after tilting back the machine head, do not push the face plate side or the pulley side from above, as this could cause the machine head to topple over, which may result in personal injury or damage to the machine.
- Be sure to wear protective goggles and gloves when handling the lubricating oil and grease, so that they do not get into your eyes or onto your skin, otherwise inflammation can result. Furthermore, do not drink the oil or eat the grease under any circumstances, as they can cause vomiting and diarrhoea. Keep the oil out of the reach of children.
- Avoid setting up the sewing machine near sources of strong electrical noise such as high-frequency welding equipment. If this precaution is not taken, incorrect machine operation may result.

3-1. Installing the spool stand

![Spool stand installation](image)

Install the spool stand 1 to the table.
3-2. Connecting the power table and the device

1. After deciding on the installation position for the sewing machine, secure the four casters ① so that the sewing machine will not move.

2. Provisionally install the power table and the pleating device using the four M8 bolts ②, spring washers and flat washers.

3. Move the feed mechanism by hand as shown in the illustration until the needle is closely aligned with the 3-mm diameter hole in the needle plate ③, and then raise the work clamp ④.
Chapter 1. Preparation of Embroidery Machine

4. Lower the ruffling mechanism 5 of the pleating device by hand, and then move the upper folding plates 6 in between the work clamp 4 and the feed plate 3.

5. Adjust the height of the four level spacers 7 so that the clearance between the bottom of the lowest upper folding plate 1 and the top of the feed plate 3 is 5 - 6 mm as shown in the illustration.

6. Once adjustment is complete, fully tighten the four M8 bolts 2 mentioned in step 2.

7. Unlock the casters 1 of the power table, and then loosen the four M6 bolts 3 mentioned in step 9.
8. Move the position of the power table so that the center of the groove 10 in the upper folding plate 8 is closely aligned with the center of the ruffle fixing needles 9 when the upper feed plates 5 are moved to the left edge (stroke end of pneumatic cylinder) and the three ruffle fixing needles 5 are lowered, as shown in the illustration.

9. Once adjustment is complete, fully tighten the four M6 bolts 3.
10. After tightening, check that the center of the groove 10 is still aligned with the center of the needles 3.
Chapter 1. Preparation of Embroidery Machine

3-3. Connecting the cords

Securely insert the connectors of the six cords \( \mathbf{1} \) to \( \mathbf{6} \) at the back of the power table (to the right of the machine head) to the connectors at the back (lower right) of the pleating device.

3-4. Installing the pleating device operation panel

1. Install the operation panel assembly \( \mathbf{2} \) to the operation panel support stand \( \mathbf{1} \) as shown in the illustration, adjust the installation angle of the operation panel, and then tighten the M5 bolt \( \mathbf{3} \).
2. Securely insert the connectors of the two cords coming out from the operation panel assembly \( \mathbf{2} \) into the connectors at the front of the pleating device.
3. After adjusting the installation position of the operation panel assembly \( \mathbf{2} \), tighten the set screw \( \mathbf{4} \).
4. Secure the cords to the operation panel support stand \( \mathbf{1} \) with the two ties \( \mathbf{5} \).

3-5. Connecting the foot switch

Securely insert the connector of the foot switch \( \mathbf{1} \) into the connector at the rear (lower left) of the pleating device as shown in the illustration.
3-6. Connecting the power cord

Connect the plug 1 to the power cord as shown in the illustration. Make sure that the ground connection is secure.

3-7. Supplying the air

1. Connect the air hoses 2 to the air regulator 1.

2. Return the ruffling mechanism 3 to the horizontal position and then move it forward to the limit of its stroke as shown in the illustration.

3. Turn the lever of the air regulator 1 to allow air to flow.
4. Adjust the air pressure to 0.49 MPa.
3-8. Lubrication

**CAUTION**

Turn off the power switch before starting lubricating, otherwise the machine may operate if the foot switch is depressed by mistake, which could result in injury.

Be sure to wear protective goggles and gloves when handling the lubricating oil and grease, so that they do not get into your eyes or onto your skin, otherwise inflammation can result. Furthermore, do not drink the oil or eat the grease under any circumstances, as they can cause vomiting and diarrhoea.

Keep the oil out of the reach of children.

**NOTE**

- Fill the machine with oil when the oil level is down to about one-third full in the oil sight glass. If oil is not added and the oil drops below this level, there is the danger that the machine may seize during operation.
- Be sure to let the machine operate for a while after adding the oil.
- Use only specified Brother oil (Nisseki Sewing Lube 10) for the machine oil.

**Lubrication points**

1. Fill the arm-side oil tank with oil.
2. Fill the bed-side oil tank with oil.
3. Add a drop of oil to the shuttle hook race.
4. If using the liquid cooling tank 1, fill it with silicon oil (100 cs).
4. Preparation for Embroidering

4-1. Selecting the needle and thread

<table>
<thead>
<tr>
<th>Needle</th>
<th>Thread</th>
<th>Main application</th>
</tr>
</thead>
<tbody>
<tr>
<td>DP 17NY 19</td>
<td>50 20</td>
<td>lace, drapes</td>
</tr>
<tr>
<td>DP 17 21</td>
<td>&quot;</td>
<td>drapes</td>
</tr>
</tbody>
</table>

Different needles and threads are used for different sewing applications.

4-2. Installing the needle

**CAUTION**

Turn off the power switch before installing the needle, otherwise the machine may operate if the foot switch is depressed by mistake and serious injury could result.

Loosen the set screw ①, insert the needle ② as far as it will go so that the groove is facing toward you and then tighten the set screw ①.
4-3. Threading the upper thread

**CAUTION**

Turn off the power switch before threading the thread, otherwise the machine may operate if the foot switch is depressed by mistake and serious injury could result.

Thread the upper thread correctly as shown in the illustration above.

**NOTE**

- Turn the machine pulley and raise the thread take-up lever 1 before threading the upper thread. (This will make threading easier and it will prevent the thread from coming out at the sewing start.)
- When threading the thread through the needle, allow a distance of approximately 40 mm between the needle hole and the end of the thread. If the trailing length of the thread is too long, it may cause the thread to.
4-4. Winding the lower thread

**CAUTION**

Do not touch or place anything against any of the moving parts while winding the lower thread, otherwise personal injury or damage to the machine may result.

1. Place the bobbin all the way onto the shaft.
2. Thread the thread as shown in the illustration at left, wind the thread around the bobbin several times in the direction of the arrow, and then press the bobbin presser ①.
3. Turn on the power switch.
   (The POWER indicator on the operation panel will illuminate.)
   - For solenoid specifications, lower the presser foot.
   - Return the machine to the home position.
   - Press the MACHINE key.
4. Check that the needle is not touching the presser foot, and then while pressing the STEP BACK switch ②, depress the foot switch ③ to start the machine. Keep depressing the foot switch ③ until the lower thread stops being wound onto the bobbin.
   Release the STEP BACK switch ② after the machine starts operating.
   If you release the foot switch before winding is completed, depress it once more while pressing and holding the STEP BACK switch ②.
5. The bobbin presser ① will automatically return to its original position after a set amount of thread (80-90% of the bobbin capacity) has been wound on.
6. Release the foot switch ③.
7. Remove the bobbin, hook the thread onto the knife ④, and then pull the bobbin in the direction of the arrow to cut the thread.
8. To wind more thread onto the bobbin, loosen the set screw ⑤ and pull the bobbin presser ① outward.

<< If the thread winds onto the bobbin unevenly >>
If the thread winds onto the bobbin unevenly, loosen the nut ⑥ and turn the bobbin winder thread tension stud ⑦ to adjust.

**NOTE**

If the thread winds on as shown in A, turn the bobbin winder thread tension stud ⑥ clockwise; if it winds on as shown in B, turn the bobbin winder thread tension stud ⑦ counterclockwise.
4-5. Replacing the bobbin case and threading the thread

<table>
<thead>
<tr>
<th>CAUTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Turn off the power switch before removing and replacing the bobbin case, otherwise the machine may operate if the foot switch is depressed by mistake and serious injury could result.</td>
</tr>
</tbody>
</table>

1. Pull the shuttle race cover ① forward and then open the cover.

2. Lift the bobbin case latch and remove the bobbin case.

3. Insert a new bobbin into the bobbin case, and then pass the thread through the slot ② and pull it out from the thread hold ③. Check that the bobbin turns in the direction of the arrow when the thread is pulled at this time.

4. Pass the thread through the lever thread hole ④, and then pull out approximately 30 mm of thread.
### Lower thread tension

Set the lower thread tension to as weak a tension as possible and so that the bobbin case drops by its own weight when the end of the thread is held. Turn the adjusting screw 1 to adjust the tension.

**NOTE**

If the lower thread tension is too weak, it may not be possible to cut the lower thread properly during thread trimming.

### Upper thread tension

Turn the tension nut 2 (main tension) to adjust the tension as appropriate for the material being sewn. Furthermore, turn the thread nut 3 (sub-tension) to adjust the remaining length of upper thread to 35 - 40 mm.

### Thread take-up spring height

Loosen screw 4 and turn the entire thread take-up unit to adjust so that the height of the thread take-up spring is 8 - 10 mm.

### Thread take-up spring tension

Adjust the thread take-up spring tension by turning the tension stud 5 with a screwdriver.
Chapter 2. Procedures

1. Panel operation (Machine)

1-1. Explanation of panel

1. POWER indicator ................... When the power is turned on, the indicator lights to show that the power is on.
2. PROGRAM No. display .......... Displays the program number 00 - 99.
3. Program select switch ............ Used to select the program number when reading a program from or writing a program to disk.
   (Only enabled when DIP switch B-2 is ON)
4. Program Read/Write switch .... Used to read a program from floppy disk, or to write a newly programmed stitch pattern to floppy disk.
   (Only enabled when DIP switch B-2 is ON)
5. Display screen .................... Used to display data such as menus, errors and memory switch settings.
6. Menu switch ..................... Used to select the desired menu (scale, speed, bobbin thread counter, split No.). One of the indicators 7 - 9 illuminates to indicate the menu selected, and the setting for that menu then appears on the display screen 5. The illuminated indicator changes in the following order each time the switch is pressed:
   SPEED indicator 7 — B.T. COUNTER indicator 6 — SPLIT indicator 9
7. SPEED indicator ...................... Illuminates when speed mode has been selected using the menu switch 6.
Chapter 2. Procedures

Bobbin Thread COUNTER ....... Illuminates when bobbin thread counter mode has been selected using the menu switch ③.

SPLIT NO. indicator .......... Illuminates when split No. mode has been selected using the menu switch ②.

Dial ............................ The setting shown on the display screen ⑤ can be changed by turning this dial while pressing the STEP BACK switch ④.

Bobbin Thread SET switch ...... Used to store the number of work pieces displayed in the bobbin thread counter to floppy disk.
(Only enabled when DIP switch B-2 is ON)

Bobbin Thread CHANGE ...... Used to continue sewing after replacing the bobbin thread.
(An alarm will sound when the counter reads <000>. Sewing is not possible when the counter reads <000>.) (Refer to "3-9. Using the bobbin thread counter".)

TEST switch .......................... Used to move the feed mechanism only in order to confirm a programmed stitch pattern.

TEST indicator ........................ Lights when the TEST switch is pressed.

STEP BACK switch .................. Used when winding a fresh bobbin, or when correcting a stitch pattern due to a broken needle thread.
Chapter 2. Procedures

1-2. Using the floppy disk

Compatible types of floppy disk

<table>
<thead>
<tr>
<th>Data type</th>
<th>No. of stitches programmed</th>
<th>Data resolution</th>
<th>Disk</th>
<th>Format</th>
<th>Write enabled</th>
</tr>
</thead>
<tbody>
<tr>
<td>300E type</td>
<td>20,000 stitches per pattern 100 pattern Up to a maximum of 360,000 stitches</td>
<td>0.05 mm/pulse</td>
<td>2HD</td>
<td>1.44 MB</td>
<td>Yes</td>
</tr>
<tr>
<td>Tajima embroidery data</td>
<td>50,000 stitches per pattern</td>
<td>0.1 mm/pulse</td>
<td></td>
<td></td>
<td>No</td>
</tr>
<tr>
<td>Old 300A type</td>
<td>4,000 stitches per pattern 10 patterns Up to a maximum of 40,000 stitches</td>
<td>0.1 mm/pulse</td>
<td>2DD</td>
<td>Automatically formatted</td>
<td>Yes</td>
</tr>
<tr>
<td>Old 300 data</td>
<td>2,000 stitches per pattern 10 patterns Up to a maximum of 20,000 stitches</td>
<td>0.2 mm/pulse</td>
<td></td>
<td></td>
<td>No</td>
</tr>
</tbody>
</table>

The above four types of data can all be read, but when writing to disk, all data is automatically converted to 300E data when writing to 2HD disks and 300A data when writing to 2DD disks.

When using a 2HD disk, use a disk which has been pre-formatted as a 1.44 MB disk. (The programmer can be used to format these disks. Refer to the programmer instruction manual for details.)

TFD embroidery data can be embroidered after it has been converted by the programmer to BAS-300E data.

Restriction on using 2DD floppy disks.

In order to maintain compatibility with the old 300A series, the following restrictions have been placed on the use of the new functions which have been added to the E series.

<table>
<thead>
<tr>
<th>Restricted function</th>
<th>A series (2DD)</th>
<th>E series (2HD)</th>
<th>Applicable command</th>
</tr>
</thead>
<tbody>
<tr>
<td>Resolution</td>
<td>0.1 mm/pulse</td>
<td>0.05 mm/pulse</td>
<td>[ 668 ] L</td>
</tr>
<tr>
<td>Low-speed conversion</td>
<td>2 types (400 and 1,200 revolutions)</td>
<td>4 types (400, 600, 800 and 1,200 revolutions)</td>
<td>[ 669 ] L</td>
</tr>
<tr>
<td>Split function during embroidering</td>
<td>Not available</td>
<td>Available</td>
<td>[ 220 ] L</td>
</tr>
<tr>
<td>Needle down stop for split</td>
<td>Not available</td>
<td>Available</td>
<td>[ 221 ] L</td>
</tr>
<tr>
<td>Expansion option output</td>
<td>Not available</td>
<td>Available</td>
<td>[ 231 ] L</td>
</tr>
</tbody>
</table>
Setting the floppy disk

1. Hold the disk ① with the label up and the metal shutter to the front, and insert the disk into the drive ②. It will click into place.
2. Turn on the power switch. The POWER indicator ③ will illuminate and the machine model number will appear on the display screen.
3. To eject the disk, press the eject button ④.

NOTE
- Slide the write protector ④ on the back of the disk up (the window opens) to lock the disk and prevent accidental erasure of the disk contents.
- Inserting the disk into the drive upside down or backwards may damage the drive and will prevent reading or writing of data.
- Be sure to store your disks away from any magnets or magnetic sources, including radios, televisions, telephones, and other devices. Magnetism can erase or damage disk contents. Also, be careful to prevent exposure of the disk to oil or dust.
1-3. Using the program R/W (Read/Write) switch

- Programmed stitch patterns stored on floppy disk can be read into memory, and newly programmed patterns can be written to disk for permanent storage and later recall.

Insert the floppy disk ① containing or which is to contain the programmed stitch pattern.

To READ a pattern to memory

Press the program select switch ③ on the operation panel. The program number will then appear in the PROGRAM NO. display ②. After selecting the desired program number, press the R/W switch ④. The disk drive indicator ⑤ will illuminate and a " " will appear on the PROGRAM NO. display ② to indicate that the data is being read. When the alarm sounds and the disk drive indicator ⑤ turns off, the program number will then flash in the PROGRAM NO. display ② instead of the " " to indicate that the reading of the data is complete.

To WRITE a pattern to disk

Press the program select switch ③ on the operation panel to select the desired program number. After programming the pattern using the stitch programmer, press the R/W switch ④. The disk drive indicator ⑤ will illuminate and a " " will appear on the PROGRAM NO. display ② to indicate that the data is being written. When the alarm sounds and the disk drive indicator ⑤ turns off, the program number will then flash in the PROGRAM NO. display ② instead of the " " to indicate that the writing of the data is complete.

If an error message is displayed

If an error message code is displayed in the display ⑦, and alarm will sound. Turn off the power switch, remove the cause of the error while referring to "6. Table of error codes" , and then repeat the operation from the beginning.
1-4. Using the TEST switch (Checking the sewing pattern)

Use the TEST switch to begin sewing again from any desired point when the thread breaks or the bobbin thread runs out.

1. Press the TEST switch ⑩. The test indicator ⑪ will light.
2. If the work clamp is raised, depress the work clamp foot switch ⑩ to lower the work clamp.
3. Press the foot switch ⑬.
   NOTE
   After the feed mechanism has returned to the home position, it will then move the sewing start position and the program number will stop flashing.
   This only occurs the first time that a program is selected.
4. Press the foot switch ⑬. The needle will remain stationary as the work clamp advances through the pattern at low speed one stitch at a time. Press the foot switch ⑩ to fast forward.
   • If the STEP BACK switch ⑬ is pressed while moving at low speed, the work clamp will move in the forward direction in steps of 100 stitches.
5. When the work clamp reaches the desired position, press the TEST switch ⑩. The work clamp will stop, and the test indicator ⑪ will go out. If the work clamp was stopped too early, press the TEST switch ⑩ again to proceed.
   • If the work clamp was stopped too late, press the STEP BACK switch ⑬ to advance the work clamp one stitch at a time.

Resuming operation from a stopping point

6. Sewing will start when the foot switch ⑬ is pressed.
1-5. Adjusting the sewing SPEED control

The sewing speed can be changed in steps of 100 spm to the appropriate speeds for each stitch length setting.

1. Press the MENU switch ⑧ until the SPEED indicator ⑦ illuminates.

2. While pressing the STEP BACK switch ⑯, turn the dial ⑱ until the desired speed is displayed.
   - The display will change in steps of 10 rpm.
1-6. Using the bobbin thread counter

Set the bobbin thread counter to display the number of pieces of the selected pattern which can be sewn with the amount of thread on the bobbin to avoid running out of bobbin thread in the middle of a pattern.

1. Press the MENU switch until the B.T. COUNTER indicator illuminates.
   • The bobbin thread counter can be set to any number from <001> to <999>. If the counter is set to <000>, sewing continues irrespective of the amount of bobbin thread remaining.

2. While pressing the STEP BACK switch, turn the dial to set the number of articles to be embroidered.

3. If the bobbin thread SET switch is pressed when DIP switch E-2 is set to ON, an alarm will beep twice and the number of work pieces shown in the counter will be stored in memory.

4. The number shown in the counter will decrease one each time the stitch pattern is completed. When the number of patterns shown in the counter is sewn, the counter will red <000>, and an alarm will sound. (The sewing machine will not start even if the start switch is pressed.)

5. Press the bobbin thread change switch and replace the bobbin. The alarm will stop, and the number of work pieces set in step 3 will be displayed again in the counter.
2. Panel operation (pleating device)

2-1. Explanation of the panel
Chapter 2. Procedures

1. Display ........................................ Shows messages and setting details.
2. Initial setting key ............................. Used to change the initial setting details.
3. Size setting key ............................... Used to change the size setting details.
4. Run prepare key ............................. If this key is pressed after entering the setting values, automatic calculation will be carried out and the pleating device will switch to sewing standby mode.
5. Numeric keys ................................. Used to enter initial settings and size settings. Furthermore, they are also used to switch over to step operation and parameter setting.
6. Enter and clear keys ....................... Used to accept or clear initial setting and size setting values which have been input.
7. Up/down arrow keys ....................... Used to move between items being selected.
8. Continuous operation key ............. Continuous operation can be carried out when the indicator is illuminated.
9. Joint compensation key ............... Lets you correct the length of material with joints by the amount of the compensation value set.
10. Auto compensation key .............. Used to correct the size of the final ruffle by means of the sensor while the indicator is illuminated.
11. Machine key ................................. Lets you create and check sewing data when the indicator is illuminated.
12. Single pleat sewing key .................. Lets you re-sew ruffles when the indicator is illuminated.
13. OP key ...................................... Used when using optional devices.

This key is used when optional equipment (such as an adjuster hook feeder) is installed.
This key cannot be used on sewing machines with standard specifications.
Chapter 2. Procedures

2-2. Entering curtain sizes

2-2-1. Entering initial setting values

1. Press the initial setting key ② to show the initial settings. The display will change to the following.

<table>
<thead>
<tr>
<th>Initial settings</th>
<th>Pleat style</th>
<th>3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Side hem</td>
<td>20 mm</td>
<td></td>
</tr>
<tr>
<td>Dim. D (*1)</td>
<td>5 mm</td>
<td></td>
</tr>
<tr>
<td>Thickness (*2)</td>
<td>2</td>
<td></td>
</tr>
</tbody>
</table>

2. Use the ▲ and ▼ keys u to move the pointer ▨ to the setting value to be changed.

3. Press the numeric keys ⑤ to change the value.

4. Once the value has been input, press the enter key ⑦. (*3)
   The value entered will be accepted and the pointer ▨ will move downward.

5. After entering the setting to be changed, press the size setting key ③ or the run prepare key ④.

   If the size setting key ③ is pressed, the display will change to the display for entering the size settings.

   If the run prepare key ④ is pressed, the display will change to the automatic run display, and the pleating device will move to the setting position. Furthermore, if the sewing pattern has been changed, the data will be read from the floppy disk and the home position for the pleating device will be determined.

NOTE

*1 Size D is the size shown in the illustration at right.

*2 The material thickness is a coefficient which is smaller for thinner materials and larger for thicker materials.

*3 If the size setting key e or the run prepare key r is pressed without pressing the enter key y, the value which was last entered will be set.
   If you make a mistake in entering a value, press the clear key ⑧ to return the setting to the previous value.
   If the value entered is outside the setting range, the buzzer will sound and the setting will return to the previous value.

Input ranges and initial values for initial settings

| Pleat style 2 or 3 (initial value 3) |
| Side hem 15 - 50 mm (initial value 20) |
| Dim. D 3 - 10 mm (initial value 5) |
| Thickness 1 - 5 (initial value 2) |
2-2-2. Entering size setting values

1. Press the size setting key \( \text{③} \) to show the initial settings. The display will change to the following.

<table>
<thead>
<tr>
<th>Setting</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Material W</td>
<td>140 cm</td>
</tr>
<tr>
<td>Finishing A</td>
<td>95 cm</td>
</tr>
<tr>
<td>No. of pleats</td>
<td>7</td>
</tr>
<tr>
<td>Lining width</td>
<td>90</td>
</tr>
</tbody>
</table>

2. Use the \( \text{△} \) and \( \text{●} \) keys \( \text{⑦} \) to move the pointer \( \text{˗} \) to the setting value to be changed.

3. Press the numeric keys \( \text{⑤} \) to change the value.

4. Once the value has been input, press the enter key \( \text{⑥} \). (*2)
   The value entered will be accepted and the pointer \( \text{˗} \) will move downward.

5. After entering the setting to be changed, press the initial setting key \( \text{②} \) or the run prepare key \( \text{④} \).
   If the initial setting key \( \text{②} \) is pressed, the display will change to the display for entering the initial settings.

   If the run prepare key \( \text{④} \) is pressed, the display will change to the automatic run display, and the pleating device will move to the setting position. Furthermore, if the sewing pattern has been changed, the data will be read from the floppy disk and the home position for the pleating device will be determined.

NOTE

*1 Finish A represents the total finished width, including the widths of both edges.
   If you would like to enter the finished width without including the widths of both edges, set memory switch No. 2 of the pleating device to ON. The display will change to show Finish B.

*2 If the initial setting key \( \text{②} \) or the run prepare key \( \text{④} \) is pressed without pressing the enter key \( \text{⑥} \), the value which was last entered will be set.
   If you make a mistake in entering a value, press the clear key \( \text{③} \) to return the setting to the previous value.
   If the value entered is outside the setting range, the buzzer will sound and the setting will return to the previous value.

Input ranges and initial values for size settings

<table>
<thead>
<tr>
<th>Setting</th>
<th>Range</th>
<th>Initial value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Material W</td>
<td>60 - 999 cm</td>
<td>140 cm</td>
</tr>
<tr>
<td>Finishing A</td>
<td>30 - 999 mm</td>
<td>95 mm</td>
</tr>
<tr>
<td>No. of pleats</td>
<td>3 - 99</td>
<td>7</td>
</tr>
<tr>
<td>Lining width</td>
<td>50, 75, 90 mm</td>
<td>90 mm</td>
</tr>
</tbody>
</table>
Chapter 2. Procedures

2-3. Parameter settings

2-3-1. Explanation of parameters

If the actual size of the curtain after sewing is different from the setting size after automatic sewing has been carried out because of stretching or gathering of the material or because of machine size error, this difference can be compensated for by changing the values of these parameters.

<table>
<thead>
<tr>
<th>Parameter type</th>
<th>Compensation details</th>
<th>Parameter range</th>
<th>Initial value</th>
</tr>
</thead>
<tbody>
<tr>
<td>A. Pleat height (3 tacks)</td>
<td>Pleat height when 3 tacks are being used</td>
<td>-10.0 mm ~ +10.00 mm</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>(ruffle girth) *1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>B. Pleat height (2 tacks)</td>
<td>Pleat height when 2 tacks are being used</td>
<td>-10.0 mm ~ +10.00 mm</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>(ruffle girth) *1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>C. Ruffle spacing</td>
<td>Pleat spacing</td>
<td>-10.0 mm ~ +10.00 mm</td>
<td>0</td>
</tr>
<tr>
<td>D. Joints</td>
<td>Joint compensation *2</td>
<td>0 mm ~ 50 mm</td>
<td>0</td>
</tr>
</tbody>
</table>

NOTE

*1 In the case of "A. Pleat height (3 tacks)", the distance between folding plate A (the first folding plate from to the front) and folding plate D (the fourth folding plate from the front) will increase by the amount of the parameter setting.
In the case of "B. Pleat height (2 tacks)", the distance between folding plate B (the second folding plate from to the front) and folding plate D (the fourth folding plate from the front) will increase by the amount of the parameter setting.

*2 Refer to "10.7 Joint compensation".

2-3-2. Using parameters

1. With the machine in the initial condition for automatic operation (with the clamp open), press and hold the [1] numeric key on the pleating device operation panel, and then press the [6] key. The display will change to the display shown in Figure 1.

   Figure 1
   Parameter setting 1
   - A. Pleat height (3 tacks) 0
   - B. Pleat height (2 tacks) 0
   - C. Pleat space 0

   Figure 2
   Parameter setting 2
   - D. Joint compensation 0

2. Use the ▲ and ▼ keys to move the pointer ▒ to the parameter to be changed.
   If the key is pressed while the pointer is at parameter C, the display will change to the display shown in Figure 2.

3. For parameters A, B and C, the parameter setting will increase by 0.1 mm each time the [1] numeric key is pressed, and will decrease by 0.1 mm each time [0] is pressed.
   Parameter D will increase or decrease in steps of 1 mm.

4. Once the setting has been changed, press and hold the [1] numeric key and then press the [6] key. The display will return to the automatic operation display.
2-3-3. Examples of parameter settings

1. Pleat height setting (3 tacks)
   If there is a difference between the pleat height of the final ruffle and the other ruffles when sewing
   using dimension compensation, the height can be adjusted by changing the setting for this parameter.
   (Example)
   If 7 ruffles with 3 pleats are sewn and the height of the final pleats is 5 mm higher than the other pleats
   □ Adjustment amount □
   Because there are 3 pleats, there are a total of 6 folds, so the amount of material remaining is 5 mm
   □6 = 30 mm. Thus, because 30 mm is to be divided between seven ruffles, 30 mm ÷ 7 = 4.3 mm,
   so parameter B (Pleat height [3 tacks]) should be increased by 4.3.

2. Pleat space setting
   If the finished size which was entered in the size settings does not exactly match the actual finished
   size after sewing, the size can be adjusted by changing the setting for this parameter.
   (Example)
   If 7 ruffles are being sewn and the finished size has been set to 100 mm, but the actual finished size
   is 95 mm
   □ Adjustment amount □
   7 ruffles means that there are 6 spaces between ruffles.
   Accordingly, 50 mm must be divided up and added to each spacing.
   (1000 mm - 950 mm) ÷ 6 = 8.3 mm
   So parameter C (Pleat space) should be increased by 8.3.

NOTE
   After setting the pleat spacing, be sure to go back and readjust the pleat height setting.
2-4. Adjusting the home position for the pleating device

1. Insert the accessory floppy disk containing the preset sewing patterns into the floppy disk drive at the right side of the operation panel.
2. Connect the power cord to a wall outlet, and then turn on the power switch.
3. When "To set home position, press foot SW3" appears on the operation panel display, press foot switch 3. (The pleating device will then return to the home position.)
4. While pressing and holding the [1] numeric key on the operation panel, press and hold the [7] and [8] keys simultaneously; after this, release the [1] key, and then release the [7] and [8] keys. (The pleating device will then change to motor home position adjustment mode.)
5. Press foot switch 3 once. (The motor will move to the home position.)
6. Measure the distance from the bottom of the upper folding plate ① and the center of the sewing groove ③ in the feed plate ②.
7. If the distance is not 95 mm ± 0.5 mm, adjust the installation position of home position dog M ④. (If the distance is less than 95 mm, move home position dog M ④ toward the sewing machine by the amount of difference; if the distance is more than 95 mm, move it in the opposite direction by the amount of difference.)
8. After adjusting, press foot switch 3 once until the upper folding plate ① stops, and then press foot switch 3 once more. (The ruffling mechanism will move to the position after adjustment.)
9. Check that the distance from the bottom of the upper folding plate ① and the center of the sewing groove ③ in the feed plate ② is 95 mm ± 0.5 mm.
10. Turn off the power switch.
2-5. Initializing the ruffling data

The memory switch settings and ruffling data settings are stored in a memory which has a battery backup. If the power is not turned on for long periods (approximately 3 weeks or more), the contents of the backup memory will be erased, and "E-169" will be generated when the power is turned back on. If this occurs, initialize the ruffling data by the following procedure.

1. If "E-169" is generated when the power is turned on, press the RESET switch.
2. After about 2 seconds, the automatic operation display will appear.

Data will be initialized.
It will take 2 seconds.
Please wait

<table>
<thead>
<tr>
<th>Auto mode</th>
<th>Plt stl</th>
<th>3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mtrl W</td>
<td>140 cm</td>
<td>Lining W</td>
</tr>
<tr>
<td>Fin. W A</td>
<td>95 cm</td>
<td>Pleat H</td>
</tr>
<tr>
<td># of plts</td>
<td>7</td>
<td>Plt space</td>
</tr>
</tbody>
</table>

NOTE

When backup initialization is carried out, the ruffling data is set to the following values.

| Pleat style | 3 |
| Side hem    | 20 mm |
| Dimension D | 5 mm |
| Thickness   | 2 |
| Material width | 140 cm |
| Finished width | 95 mm |
| # of pleats | 7 |
| Lining width | 90 cm |
Chapter 2. Procedures

3. Creating sewing data

3-1. Explanation of sewing patterns

1. This sewing machine can automatically select a single program number (sewing pattern) from the 30 different types of programs stored on the floppy disk by means of the lining width \( q \) and pleat height \( w \) dimensions for the curtain which have been set using the operation panel.

**NOTE**

The programs are selected by number, so create the programs (sewing patterns) according to the details given in Table “3-2. Program numbers”.

2. The sewing machine has a sensor which detects the thickness of the bartacking sections of the material, and automatically changes the sewing speed for the bartacking sections to one of two speeds. An independent split mode is used to change the speed, so it is not necessary to program these speed changes when creating programs (sewing patterns).

3. The accessory floppy disk already contains the programs (sewing patterns) shown in the table.

4. The programs (sewing patterns) vary depending on the type of curtain being sewn, so it sometimes may be necessary to create programs.
3-2. Program numbers

Programs are stored by numbers as shown in the table below.
Store all 30 types of programs by setting the lining width to 50 mm, 75 mm and 90 mm, and setting 10 different pleat heights. If you do not need to divide the pleat heights into 10 different steps, save the same program under the respective program numbers.
(For example, if the bar taking positions are the same for pleat heights from 12 mm to 17 mm, save the same program under program numbers 1, 2 and 3.)

<table>
<thead>
<tr>
<th>Lining width</th>
<th>Program No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pleat height</td>
<td>50 mm</td>
</tr>
<tr>
<td>12</td>
<td>1</td>
</tr>
<tr>
<td>14</td>
<td>2</td>
</tr>
<tr>
<td>16</td>
<td>3</td>
</tr>
<tr>
<td>18</td>
<td>4</td>
</tr>
<tr>
<td>20</td>
<td>5</td>
</tr>
<tr>
<td>22</td>
<td>6</td>
</tr>
<tr>
<td>24</td>
<td>7</td>
</tr>
<tr>
<td>27</td>
<td>8</td>
</tr>
<tr>
<td>30</td>
<td>9</td>
</tr>
<tr>
<td>33</td>
<td>10</td>
</tr>
</tbody>
</table>
3-3. Creating programs

NOTE
Refer to the Instruction Manual for the programmer for details on how to use the programmer.

1. Open the cover at the right of the machine operation panel, and set DIP switch B-2 to ON.
2. Connect the programmer to the connector at the right of the machine operation panel.
3. Turn on the power switch.
4. When "To set home position, press foot SW3" appears on the operation panel display, press foot switch 3.
   The sewing machine and the pleating device will then move to their home positions.

5. Once the home positions have been determined, press the MACHINE key.
   The ruffling mechanism will move to the right.

   The work clamp will be lowered and the feed mechanism will move to the home position.
7. Insert the accessory floppy disk and read in program No. 0.
8. Press the [1] key and the [+ ] key on the programmer.
   The machine feed mechanism will move to the retract point (the position where the needle is aligned
   with the center of the 3-mm diameter hole in the needle plate).
   The machine feed mechanism will move to the fixed length sewing line.
10. Create the fixed length sewing data using feed data and straight-line stitches.
11. Create the bar tacking data using feed data and straight-line stitches.

NOTE
When creating the feed data, make sure that the needle does not pass over the top of the work
clamp. Change the sewing speed to low speed (667) at the places where bar tacking data is being
created.
12. Press the [1] key and the [+] key on the programmer.
   The machine feed mechanism will move to the retract point (the position where the needle is aligned
   with the center of the 3-mm diameter hole in the needle plate).
13. Press the [1] key and the [+] key on the programmer.
   The machine feed mechanism will move to the fixed length sewing line.
14. Create the fixed length sewing data using feed data and straight-line stitches. (Same as in step 9.)
15. Create the bar tacking data using feed data and straight-line stitches. (Same as in step 10.)
   **NOTE**
   When creating the feed data, make sure that the needle does not pass over the top of the work
   clamp. Change the sewing speed to low speed (666) at the places where bar tacking data is being
   created.
16. After the final feed data has been entered, enter the end code (111) and then press the [E] key.
17. Replace the floppy disk with a new disk and then select the program number to write the program onto
   the disk.
18. After 30 programs have been created, turn off the power switch.
19. Open the cover at the right of the machine operation panel, and set DIP switch B-2 to OFF.
20. Disconnect the programmer from the connector at the right of the machine operation panel.
1. This sewing machine is equipped with EMERGENCY STOP switches in two places as shown in the illustration: on the left side of the machine arm 1 and on the operation panel of the pleating device 2.

2. If either EMERGENCY STOP switch is pressed while the sewing machine and the pleating device are in most stages of operation, operation will stop. However, operation will not stop if the pneumatic cylinder is in operation at the time the switch is pressed. Furthermore, if an EMERGENCY STOP switch is pressed during automatic operation, it will not be possible to start sewing the curtain again from the point where sewing was stopped.

3. Clearing the emergency stop
   If the EMERGENCY STOP switch 1 on the operation panel of the pleating device was pressed, turn the EMERGENCY STOP switch 1 approximately 90° clockwise to unlock it, and then press the RESET switch.
   The pleating device will retract, and it will then return to the position it was at when the power was turned on.

3-5. Home positioning
1. After the power switch is turned on, after an emergency stop has been cleared and after a sewing machine error (an error which can be reset) has been cleared, home positioning must then be carried out before operating the pleating device operation panel and before carrying out sewing.

2. If the message shown in the illustration appears on the display of the ruffling unit operation panel, press foot switch 3. Home positioning of the pleating device motor and the sewing machine feed mechanism will then be carried out.

   To set home position,
   press foot SW3.
Chapter 3. Sewing

1. Automatic operation procedure

1. Turn on the power switch.
   The following messages will appear in order on the pleating device display.
   
   NOTE
   After turning off the power, wait 10 seconds or more before turning the power back on again.

2. Press foot switch 3.

3. To set home position,
   press foot SW3.

4. Searching home position ...
   Please wait.

5. Auto mode  |  Plt stl  | 3
   Mtrl W1  | 140 cm  | Lining W | 90 cm
   Fin. W A | 95 mm   | Pleat H  | 14 mm
   of plts 7| Plt space| 151 mm

3. Enter the initial setting values and size setting values.
4. After entering the values, press the run prepare key.
5. With the upper-left edge of the curtain to be sewn touching against the positioning plate 2 of the clamp 1, press foot switch 1. The clamp will close to hold the upper-left edge of the curtain.

6. While holding the curtain lining, pass it between the four upper folding plates 1 and lower folding plates 2, and pull the material straight so that the leading edge of the material is touching against the guide plate 3. Then press foot switch 2. The four lower folding plates 2 (three plates when using two tucks) will rise and clamp the material.

7. If the material position or tension is not correct, press foot switch 2 once more. The lower folding plates 2 will then be lowered, so re-position the material and then press foot switch 2 once more.

8. Once setting of the material is complete, press foot switch 3. The pleating device will start operating. (Operation will be carried out continuously from the formation, feeding and sewing of the pleats to the return of the pleating device.)

9. Repeat steps 6. to 8. once for each pleat to be sewn.
2. Continuous operation

1. Press the continuous operation key when the machine is in the initial condition for automatic operation (while the clamp is open). The green indicator at the top-left of the key will illuminate.

2. The pleating device will then start operating without the need to carry out step 8 in "1. Automatic operation procedure" (without pressing foot switch 3).

   However, note that it will not be possible to reset the position of the material during this procedure.

3. Once sewing of a single curtain is complete, press the continuous operation key once more. Continuous operation will then be canceled.
3. Compensation

3-1. Automatic compensation

1. Press the auto compensation key when the machine is in the initial condition for automatic operation (while the clamp is open). The green indicator at the top-left of the key will illuminate.

2. The material edge sensor ① will operate before the last pleat is sewn during automatic operation as shown in the illustration, and the display will change as shown at left.

3. While holding the curtain lining (to the left of the sensor position) as shown in the illustration, pull the material straight and then press foot switch 3.

4. The folding plates ② will start opening toward you, and will stop when they reach the side hem setting dimension. The display will then change as shown at left.

5. Carry out steps 6 to 8 in "1. Automatic operation procedure" (after setting the material, press foot switch 2, and if the material is set correctly press foot switch 3).

6. Once sewing of a single curtain is complete, press the auto compensation key once more. Automatic compensation will then be canceled.

NOTE
If the side hem dimension is not correct because some reason such as incorrect setting of the material, press the RESET switch to carry out re-compensation.
3-2. Last three pleat compensation (including automatic compensation)

When memory switch 5 is set to ON for automatic compensation, the dimension compensating function can then control the material edge alignment when sewing long curtains, so that in addition to automatic fold height compensation for the last remaining pleat, you can also set automatic fold height compensation for the last three remaining pleats.

1. Set memory switch 5 to ON and press the [Dimension compensation] key when the machine is in the initial condition for automatic operation (while the clamp is open). The indicator will then illuminate.

   Compensating dimension
   Enter the length of remaining material
   (Calculated value 100 cm)
   ◆ Actual value 100 cm

2. When automatic operation starts, <Display 1> will appear as shown below just before the third pleat from the end is formed.

   (The calculated length of material remaining [the length from the end to the end of the material in cm units] will appear as the "Calculated value" in the display.)

3. The operator should measure the actual remaining length of material [the length from the fixed stitch line of the 4th pleat from the end to the end of the material] using a tape measure, and then use the numeric keypad on the operation panel to enter this measurement as the "Actual value". (*1)

   * The "Actual value" section will initially show the same value as the value in the "Calculated value" section. If the operator considers that the actual value display is correct, it is enough simply to press the [Enter] key. In addition, if the value entered is excessively large from a logical point of view, the value will not be accepted.

   Remaining length is too large and sewing is not possible. Press the Cancel key and re-enter the actual value.
   The maximum effective length is 75 cm.

   Remaining length is too small and sewing is not possible. Press the Cancel key and re-enter the actual value.
   The maximum effective length is 75 cm.

4. After entering the value, press the [Enter] key. The folding plates will move to the position after compensation is applied. (any difference between the calculated length remaining and the actual length remaining is compensated for by adjusting the heights of the last three pleats so that the edge of the material comes to the correct position. In addition, when the [Enter] key is pressed, either <Display 2> or <Display 3> below appears if there is an error in the actual value entered.

5. If this happens, press the [Cancel] key to clear the entered value, and then re-enter the "Actual value". When the correct value is entered, the display will return to the automatic operation display and operation will proceed to the next pleat folding process.

6. From this point on, the third-last and second-last pleats will be folded and sewn.

7. At the last pleat, the operation described in "3.1 Automatic compensation using the compensation sensor?? above will be carried out.
Chapter 3. Sewing

4. Adjusting the compensation sensor
The sensitivity of the sensor can be adjusted for sewing different types of materials from drapes to lace.

1. Turn on the power.

2. Check that the sensor output control ① is set to "L".

3. Turn the sensitivity control ② until the stability indicator (green) and operation indicator (red) are both illuminated.

4. Place the material in between the sensor and the reflector mirror and check that the red indicator switches off.

5. If the operation indicator (red) does not switch off, turn the sensitivity control ② in the direction of the arrow until the indicator switches off.

NOTE

• Do not press the foot switches when adjusting the sensor, otherwise the sewing machine may operate and injury may result.
• Do not directly touch the light-emitting section of the sensor.
• If the stability indicator (green) does not illuminate when the material is inserted even after the sensor has been adjusted, the compensation signal is unreliable, and so the compensation should be changed to manual.
• Refer to "Setting the memory switches" on page 46 for details on changing compensation to manual.
Manual compensation

The manual compensation function is used if the material is too thin for the material edge sensor to be used.

1. Change memory switch No. 1 to ON.

2. Press the auto compensation key when the machine is in the initial condition for automatic operation (while the clamp is open). The green indicator at the top-left of the key will illuminate.

3. The display will change as shown below before the last pleat is sewn during automatic operation.

   Manual dimension compensation
   Foot SW1: Folding plate shrinks.
   Foot SW2: Dim. compensation fin.
   Foot SW3: Folding plate spreads.

4. While holding the curtain lining, pull the material straight, and then press foot switch 1 and foot switch 3 to adjust the position of folding plate A so that the side hem dimension equals the setting value. Once positioning is complete, press foot switch 2. The lower folding plates will then rise and clamp the material.

5. Once setting of the material is complete, press foot switch 3. The pleating device will start operating. (Operation will be carried out continuously from the formation, feeding and sewing of the pleats to the return of the pleating device.)
Chapter 3. Sewing

5. Sewing machine (separate machine head operation)

1. Press the machine key when the machine is in the initial condition for automatic operation (while the clamp is open).

2. Press foot switch 1 to raise and lower the work clamp, and press foot switch 3 to start the machine.

3. Once machine head adjustment and creating of programs is complete, press the machine key once more. The folding plates of the pleating device will move to the left and separate machine head operation will be canceled.

NOTE

Refer to "3-3. Creating programs" for details on how to create programs.
6. Single pleat sewing

If part of a pleat needs to be sewn again once sewing of a single curtain is complete, unpick the thread for that pleat and then re-sew only that pleat.

1. Press the single pleat sewing key when the machine is in the initial condition for automatic operation (while the clamp is open).
   The green indicator at the top-left of the key will illuminate and the display will change to the display shown in the illustration. At the same time, the folding plates of the pleating device will move to the spacing position which has been set and the clamp will be lowered.

<table>
<thead>
<tr>
<th>Single pleat</th>
<th>Pleat style</th>
<th>3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lining width</td>
<td>90 cm</td>
<td></td>
</tr>
<tr>
<td>Pleat height</td>
<td>14 mm</td>
<td></td>
</tr>
<tr>
<td>Pleat space</td>
<td>151 mm</td>
<td></td>
</tr>
</tbody>
</table>

2. While holding the curtain lining, align it by eye with the pleat spacing, pass it between the four upper folding plates and lower folding plates, and pull the material straight so that the leading edge of the material is touching against the guide plate. Then press foot switch 2. The four lower folding plates (2 (three plates when using two tucks) will rise and clamp the material.

3. Once setting of the material is complete, press foot switch 3.
   The pleating device will start operating. (Operation will be carried out continuously from the formation, feeding and sewing of the pleats to the return of the pleating device.)

4. To continue sewing another pleat, while holding the curtain lining, align it by eye with the pleat spacing, pass it between the four upper folding plates and lower folding plates, and pull the material straight so that the leading edge of the material is touching against the guide plate. Then press foot switch 2. The four lower folding plates 2 (three plates when using two tucks) will rise and clamp the material.

5. Once setting of the material is complete, press foot switch 3.
   The pleating device will start operating. (Operation will be carried out continuously from the formation, feeding and sewing of the pleats to the return of the pleating device.)

6. Once re-sewing of pleats is complete, press the single pleat sewing key. The work clamp will be raised and the pleating device will return to the initial condition for automatic operation.
7. Joint compensation

This is used when the height of a pleat is small (the calculated pleat height is less than 25mm) because of reasons such as joints in the material, so that the sections with joints are not normally folded into pleats.

1. Press the joint correction key when the machine is in the initial condition for automatic operation (while the clamp is open).

   The display will change to the display shown in the illustration. At the same time, the pleat height will be recalculated. (If the results of calculation mean that the sewing pattern needs to be changed, the sewing pattern will be read and the sewing machine will move to the home position.)

2. Once the joint section is fed between the four folding plates during automatic operation, press foot switch 1 before pressing foot switch 2.

   The four folding plates (three plates when using two tucks) will open by the amount specified by parameter D.

   **NOTE**

   The operation cannot be canceled after foot switch 1 is pressed.

   If foot switch 1 is not pressed when using joint compensation (joint compensation is not carried out), there may be material left over after the final pleat is formed, and the final pleat may become larger.

3. Operations other than those in step 2 are the same as in the procedure for automatic sewing.

4. Once a single curtain has been sewn, press the joint compensation key once more. Joint compensation will then be canceled.
8. Operations when the thread breaks

This sewing machine is equipped with an upper thread breakage detector.

Adjusting the upper thread breakage detector

1. If an upper thread breakage occurs during automatic sewing, the machine will automatically stop and the display will change to the following.

<table>
<thead>
<tr>
<th>Auto mode of plts</th>
<th>Lining W</th>
</tr>
</thead>
<tbody>
<tr>
<td>Plt space</td>
<td>Pleat H</td>
</tr>
<tr>
<td>Thickness</td>
<td>Side hem</td>
</tr>
</tbody>
</table>

E-110
Upper thread has broken
Press the reset switch and pass upper thread

NOTE
If sewing defects occur because an upper thread breakage sensor detection error has occurred or the lower thread does not feed properly, press the RESET switch after sewing and then press foot switch 3 to carry out re-sewing.

2. Press the RESET switch. The sewing machine will trim the thread and the display will change to the following.

For re-sewing
Make step-back and press start switch

3. Thread the upper thread through the machine needle.
4. Press the STEP BACK switch on the machine operation panel to return the feed mechanism to the point where the upper thread breakage occurred.

NOTE
If foot switch 3 is pressed without pressing the STEP BACK switch, the machine feed mechanism will return to the home position.

5. Press foot switch 3. The machine will then start sewing.
Chapter 3. Sewing

8-1. Adjusting the sensor sensitivity

Turn on the power to the machine.

1. Remove the amp unit cover ①, and move the switch ② from L-ON to D-ON.

2. With no thread in the machine, turn the sensitivity control ③ clockwise to the position where the red indicator ④ illuminates.

3. Turn the sensitivity control ③ counterclockwise to the point where the red indicator ④ switches off, and then turn it a further 1/2 a turn.

4. Move the switch ② from D-ON back to L-ON.

NOTE

• Check that the green and red indicators illuminate when the machine has been threaded, and that the red indicator switch is off when the machine is not threaded.

• If the face plate thread guide ⑤ is not installed correctly, the fiber may not detect the thread when the thread is tight.
Chapter 4. Memory Switches

1. Explanation of memory switches

The memory switches are used to change the actions of particular functions.

<table>
<thead>
<tr>
<th>Switch No.</th>
<th>Operation details when set to ON</th>
</tr>
</thead>
<tbody>
<tr>
<td>Memory SW-1</td>
<td>Automatic compensation function switches to manual compensation using the foot switch.</td>
</tr>
<tr>
<td>Memory SW-2</td>
<td>Finished width A becomes equal to finished width B, and the side hem is not included.</td>
</tr>
<tr>
<td>Memory SW-3</td>
<td>Spare</td>
</tr>
<tr>
<td>Memory SW-4</td>
<td>Spare</td>
</tr>
<tr>
<td>Memory SW-5</td>
<td>Set memory switch 5 to ON and press the [Dimension compensation] key when the machine is in the initial condition for automatic operation (while the clamp is open). The indicator will then illuminate.</td>
</tr>
<tr>
<td>Memory SW-6</td>
<td>Spare</td>
</tr>
<tr>
<td>Memory SW-7</td>
<td>Spare</td>
</tr>
<tr>
<td>Memory SW-8</td>
<td>Spare</td>
</tr>
</tbody>
</table>

2. Using the memory switches

1. When the machine is in the initial condition for automatic operation (while the clamp is open), press and hold the [1] key on the pleating device and then press the [9] key. The display will change to that shown in Fig. 1.

   Memory SW1  No.1 = OFF
   No.2 = OFF
   No.3 = OFF
   No.4 = OFF

2. Use the ▲ and ▼ keys to move the pointer ▲ to the memory switch number setting to be changed. If the ▼ key is pressed while the pointer is at No. 4, press the ▼ key.

   Memory SW2  No.5 = OFF
   No.6 = OFF
   No.7 = OFF
   No.8 = OFF

3. The setting toggles between ON and OFF each time the [0] numeric key is pressed.
4. Once the setting is complete, press and hold the [1] numeric key once more and then press the [9] key. The display will then return to the automatic operation display.
Chapter 5. DIP Switches

NOTE
Be sure to turn off the power before changing any of the DIP switch settings.
If the machine power is turned on, any changes to the DIP switch settings will not take effect until the power is turned off and then back on again.

1. Functions of control box DIP switches

<table>
<thead>
<tr>
<th>DANGER</th>
</tr>
</thead>
<tbody>
<tr>
<td>Be sure to turn off the power switch, disconnect the power cord from the wall outlet and await at least 5 minutes before opening the control box cover. Touching areas of high voltage inside the control box may result in severe injury.</td>
</tr>
</tbody>
</table>

![Diagram of DIP switches]

<table>
<thead>
<tr>
<th>DIP switches</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th></th>
<th>ON</th>
<th>OFF</th>
</tr>
</thead>
<tbody>
<tr>
<td>SW-1</td>
<td>Japanese display</td>
<td>English display</td>
</tr>
<tr>
<td>SW-2</td>
<td>Spare</td>
<td>Spare</td>
</tr>
<tr>
<td>SW-3</td>
<td>Optional functions enabled</td>
<td>Optional functions disabled</td>
</tr>
<tr>
<td>SW-4</td>
<td>Pleating data initialization</td>
<td>Normal operation</td>
</tr>
</tbody>
</table>

* If any one of SW2, SW3 or SW4 is ON when the power is turned on, the buzzer will sound twice as a notification.
* Do not set SW3 to ON if no optional equipment is installed, otherwise equipment damage may result.
## 2. Function of DIP switches

Switch No. | Operation details when set to ON.
---|---
A-1 | Always leave in the ON position.
A-2 | Operation details when set to OFF.
A-3 | Operation details when set to OFF.
A-4 | Always leave in the ON position.
A-5 | Operation details when set to OFF.
A-6 | Operation details when set to OFF.
A-7 | Operation details when set to OFF.
A-8 | Thread breakage detector device is activated.
B-1 | Always leave in the ON position.
B-2 | Enables operation of the program select switch and read/write (R/W) switch. Always set to OFF for automatic sewing.
B-3 | Operation details when set to OFF.
B-4 | Needle cooler output is produced.
B-5 | When a liber-type thread breakage detector device is used, detection precision is increased from 5 to 10.
B-6 | Always leave in the ON position.
B-7 | Always leave in the ON position.
B-8 | Feeding speed is switched to high speed.
## Chapter 6. Table of Error Codes

**NOTE**

Wait 10 seconds after turning off the power before turning it back on again.

<table>
<thead>
<tr>
<th>Display</th>
<th>Cause</th>
<th>Remedy</th>
</tr>
</thead>
<tbody>
<tr>
<td>E-100</td>
<td>EMERGENCY STOP switch was pressed.</td>
<td>Unlock the EMERGENCY STOP switch and then press the RESET switch.</td>
</tr>
<tr>
<td>E-101</td>
<td>Foot switch 3 was being pressed when the power was turned on.</td>
<td>Release foot switch 3 and then press the RESET switch.</td>
</tr>
<tr>
<td>E-102</td>
<td>The EMERGENCY STOP was being pressed when the power was turned on.</td>
<td>Unlock the EMERGENCY STOP switch and then press the RESET switch.</td>
</tr>
<tr>
<td>E-103</td>
<td>EMERGENCY STOP switch is disconnected.</td>
<td>Turn off the power and check the EMERGENCY STOP switch connection.</td>
</tr>
<tr>
<td>E-110</td>
<td>Upper thread breakage occurred during sewing.</td>
<td>Press the RESET switch and then thread the upper thread.</td>
</tr>
<tr>
<td>E-120</td>
<td>Lower thread counter on machine operation panel is at &quot;000&quot;.</td>
<td>After replacing the bobbin, press the bobbin replacement key on the machine operation panel.</td>
</tr>
<tr>
<td>E-150</td>
<td>Incorrect folding plate home position sensor position, or poor contact.</td>
<td>Turn off the power and check the sensor.</td>
</tr>
<tr>
<td>E-151</td>
<td>Incorrect loading home position sensor position, or poor contact.</td>
<td>Turn off the power and check the sensor.</td>
</tr>
<tr>
<td>E-153</td>
<td>Incorrect folding plate compression sensor position, or poor contact.</td>
<td>Turn off the power and check the sensor.</td>
</tr>
<tr>
<td>E-156</td>
<td>Incorrect rear clamp sensor position, or poor contact.</td>
<td>Turn off the power and check the sensor.</td>
</tr>
<tr>
<td>E-157</td>
<td>Incorrect hook insertion sensor position, or poor contact.</td>
<td>Turn off the power and check the sensor.</td>
</tr>
<tr>
<td>E-158</td>
<td>Incorrect hook fixing needle sensor position, or poor contact.</td>
<td>Turn off the power and check the sensor.</td>
</tr>
<tr>
<td>E-159</td>
<td>Incorrect folding plate horizontal sensor position, or poor contact.</td>
<td>Turn off the power and check the sensor.</td>
</tr>
<tr>
<td>E-160</td>
<td>Incorrect folding plate vertical sensor position, or poor contact.</td>
<td>Turn off the power and check the sensor.</td>
</tr>
<tr>
<td>E-161</td>
<td>Incorrect folding plate retract sensor position, or poor contact.</td>
<td>Turn off the power and check the sensor.</td>
</tr>
<tr>
<td>E-162</td>
<td>Incorrect folding plate reset sensor position, or poor contact.</td>
<td>Turn off the power and check the sensor.</td>
</tr>
<tr>
<td>E-164</td>
<td>Incorrect pleat needle lift sensor position, or poor contact.</td>
<td>Turn off the power and check the sensor.</td>
</tr>
</tbody>
</table>
## Chapter 6. Table of Error Codes

<table>
<thead>
<tr>
<th>Display</th>
<th>Cause</th>
<th>Remedy</th>
</tr>
</thead>
<tbody>
<tr>
<td>E-165</td>
<td>Incorrect pleat needle operation, incorrect drop sensor position, or poor contact.</td>
<td>Press the RESET switch to retract the device, and then turn off the power and check the sensor.</td>
</tr>
<tr>
<td>E-166</td>
<td>Incorrect pleat feed-out sensor position, or poor contact</td>
<td>Turn off the power and check the sensor.</td>
</tr>
<tr>
<td>E-167</td>
<td>Incorrect work clamp right lift sensor position, or poor contact</td>
<td>Turn off the power and check the sensor.</td>
</tr>
<tr>
<td>E-168</td>
<td>Dimension compensation sensor detection error</td>
<td>Press the RESET switch and then re-compensate.</td>
</tr>
<tr>
<td>E-169</td>
<td>Corrupted pleating data</td>
<td>Press the RESET switch and then re-initialize.</td>
</tr>
<tr>
<td>E-172</td>
<td>Incorrect feed plate horizontal and vertical sensor positions when power is turned on, or poor contacts.</td>
<td>Turn off the power and check the sensor.</td>
</tr>
<tr>
<td>E-173</td>
<td>Incorrect feed plate retract and reset sensor positions when power is turned on, or poor contacts.</td>
<td>Turn off the power and check the sensor.</td>
</tr>
<tr>
<td>E-174</td>
<td>Incorrect pleat needle up and down sensor positions when power is turned on, or poor contacts.</td>
<td>Turn off the power and check the sensor.</td>
</tr>
<tr>
<td>E-175</td>
<td>Corrupted parameter data</td>
<td>Press the RESET switch and then re-initialize.</td>
</tr>
<tr>
<td>E-176</td>
<td>Insufficient material remaining, or EMERGENCY STOP switch was pressed to stop sewing.</td>
<td>Press the EMERGENCY STOP switch to stop sewing.</td>
</tr>
<tr>
<td>E-177</td>
<td>Incorrect folding plate operation.</td>
<td>Turn off the power, and then check the folding plates and servo motor, or check that the material is not too thick.</td>
</tr>
<tr>
<td>E-179</td>
<td>Poor dimension compensation sensor contact when power is turned on.</td>
<td>Press the RESET switch and sew without the sensor, or turn off the power and check the sensor.</td>
</tr>
<tr>
<td>E-180</td>
<td>Incorrect hook insertion arm right edge sensor operation, or poor contact.</td>
<td>Turn off the power and check the sensor.</td>
</tr>
<tr>
<td>E-181</td>
<td>Incorrect hook insertion arm left edge sensor operation, or poor contact.</td>
<td>Press the RESET switch to retract the device, and then turn off the power and check the sensor.</td>
</tr>
<tr>
<td>Display</td>
<td>Cause</td>
<td>Remedy</td>
</tr>
<tr>
<td>---------</td>
<td>-------</td>
<td>--------</td>
</tr>
<tr>
<td>E-182</td>
<td>Incorrect hook fixing needle upper edge sensor operation, or poor contact.</td>
<td>Turn off the power and check the sensor.</td>
</tr>
<tr>
<td>E-183</td>
<td>Incorrect hook fixing needle lower edge sensor operation, or poor contact.</td>
<td>Press the RESET switch to retract the device, and then turn off the power and check the sensor.</td>
</tr>
<tr>
<td>E-201</td>
<td>Machine floppy disk error</td>
<td>Press the RESET switch and re-read the floppy disk.</td>
</tr>
<tr>
<td>E-202</td>
<td>Machine floppy disk error</td>
<td>Turn off the power, and then check the floppy disk and the sewing machine.</td>
</tr>
<tr>
<td>E-210</td>
<td>Incorrect sewing machine operation.</td>
<td>After checking the error code on the machine display panel, turn off the power and check while referring to the BAS-311E Instruction manual.</td>
</tr>
<tr>
<td>E-220</td>
<td>Incorrect sewing machine work clamp operation.</td>
<td>Turn off the power and check the machine.</td>
</tr>
<tr>
<td>E-230</td>
<td>Poor harness contact between sewing machine and device.</td>
<td>Turn off the power and check the connection harness.</td>
</tr>
<tr>
<td>E-231</td>
<td>Poor harness contact between sewing machine and device.</td>
<td>Turn off the power and check the connection harness.</td>
</tr>
<tr>
<td>E-240</td>
<td>Incorrect sewing machine work clamp operation.</td>
<td>Turn off the power and check the sewing machine presser foot or the air pressure.</td>
</tr>
<tr>
<td>E-300</td>
<td>Damaged servo motor or motor driver, or poor contact.</td>
<td>Turn off the power and check the servo motor or the motor driver.</td>
</tr>
<tr>
<td>E-330</td>
<td>Damaged servo motor or motor driver, or poor contact.</td>
<td>Turn off the power and check the servo motor or the motor driver.</td>
</tr>
<tr>
<td>E-340</td>
<td>Incorrect folding plate home position sensor position, or poor contact.</td>
<td>Turn off the power and check the sensor.</td>
</tr>
<tr>
<td>E-341</td>
<td>Incorrect folding plate positioning.</td>
<td>Check the movement of the folding plates and press the RESET switch.</td>
</tr>
<tr>
<td>E-350</td>
<td>Incorrect loading home position sensor position, or poor contact.</td>
<td>Turn off the power and check the sensor.</td>
</tr>
<tr>
<td>E-400</td>
<td>Poor panel harness contact, or damaged communication board.</td>
<td>Turn off the power and check the harness connections.</td>
</tr>
<tr>
<td>E-999</td>
<td>Error generated from unknown cause.</td>
<td>Turn the power off and back on again. If the same error code appears, contact a Brother Service Center.</td>
</tr>
</tbody>
</table>
3-2. Last three pleat compensation (including automatic compensation)

When memory switch 5 is set to ON for automatic compensation, the dimension compensating function can then control the material edge alignment when sewing long curtains, so that in addition to automatic fold height compensation for the last remaining pleat, you can also set automatic fold height compensation for the last three remaining pleats.

1. Set memory switch 5 to ON and press the [Dimension compensation] key when the machine is in the initial condition for automatic operation (while the clamp is open). The indicator will then illuminate.

2. When automatic operation starts, <Display 1> will appear as shown below just before the third pleat from the end is formed.

(The calculated length of material remaining [the length from the end to the end of the material in cm units] will appear as the "Calculated value" in the display.)

3. The operator should measure the actual remaining length of material [the length from the fixed stitch line of the 4th pleat from the end to the end of the material] using a tape measure, and then use the numeric keypad on the operation panel to enter this measurement as the "Actual value". (*1)

* The "Actual value" section will initially show the same value as the value in the "Calculated value" section. If the operator considers that the actual value display is correct, it is enough simply to press the [Enter] key. In addition, if the value entered is excessively large from a logical point of view, the value will not be accepted.

4. After entering the value, press the [Enter] key. The folding plates will move to the position after compensation is applied. (any difference between the calculated length remaining and the actual length remaining is compensated for by adjusting the heights of the last three pleats so that the edge of the material comes to the correct position. In addition, when the [Enter] key is pressed, either <Display 2> or <Display 3> below appears if there is an error in the actual value entered.

5. If this happens, press the [Cancel] key to clear the entered value, and then re-enter the "Actual value". When the correct value is entered, the display will return to the automatic operation display and operation will proceed to the next pleat folding process.

6. From this point on, the third-last and second-last pleats will be folded and sewn.

7. At the last pleat, the operation described in "3.1 Automatic compensation using the compensation sensor" above will be carried out.