USER’S MANUAL

TEMX-C series

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Foreword

This user's manual describes about the correct using method and instructions for use of this product. Please use this machine after understanding the contents of the manual.

This manual may contain discrepancies in detailed specification as compared with the actual production. If you have any question about this manual, consult your TAJIMA distributor.

We believe that "BASICS TAJIMA EMBROIDERY MACHINES" and "MACHINE SETUP INSTRUCTIONS" are useful to deepen your knowledge about this product. Please also read those booklets.

Regarding how to handle the products related, refer to the user's manual exclusive for them included in the manual CD.

Tokai Industrial Sewing Machine Co., Ltd.

SAFETY PRECAUTIONS

To prevent any harm or damage to the person who use this product or other person, we describe items that must be surely followed as below.

- **DANGER**: Indicates that there is a lot of danger of death or serious injuries [*1] if handled by mistake.
- **WARNING**: Indicates that there is a likelihood of death or serious injuries [*1] if handled by mistake.
- **CAUTION**: Indicates a potentially hazardous situation which may result in minor or moderate injury [*2] or property damage if handled by mistake.

*1: A condition caused by electric shock, injury, fracture of a bone, etc., that leads to aftereffects, or an injury that necessitates hospitalization or visits to a hospital over a long period.

*2: An injury that does not necessitate hospitalization or visit to a hospital over a long period.
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1. Safety Precautions

1-1. Warning

To prevent accidents resulting in injury or death and physical damage, the following items must be observed strictly when operating the machine.

![WARNING]

- This machine is designed for industrial use. Use this machine for semi- or finished textile products and similar materials. Using the machine for other purposes must be avoided.
- Do not stand on the machine.
- For the machine model with the bar switch, using the bar switch as a grip to support yourself is strictly prohibited.
- Do not use a device such as a cellular phone that generates microwave near the control circuits of the power supply box, the operation panel box, etc. Microwave may cause malfunctioning of the machine.
- Do not remove the covers for the shaft and the pulleys. Also, do not run the machine without the covers.
- Do not put your hands, etc. access to the vicinity of needle during operation. Sticking of needle could injure you.
- During operation, do not access your hands and/or face to moving sections. Especially, it is dangerous around needle, rotary hook, take-up lever, pulley and speed-reduction box.
- This machine used strong magnet. The person, who is mounted with internal implantable medical electronics like a pacemaker, should not use this machine. The person who is mounted with an equipment described above also should not access to magnet inside of this machine. This internal equipment could malfunction.
- Please read this book thoroughly and understand the contents of operation certainly. Then, operate the machine.

![WARNING]

- Wear proper clothes and tidy up yourself so that you can smoothly perform the operation.
- A single operator should operate the machine in principle. If plural operators are working together, make sure that no one is working near the moving units of the machine before starting the machine.
- Use the machine under the environment where access can be supervised so that unauthorized person does not operate the machine. Supervise children so that they do not access to the machine.
- Only the persons who are sufficiently trained for the operation must operate the machine.
- The rear of the machine is not a working area. If you have to move to the rear of the machine, make sure to turn off the main switch.
Stop the machine before threading into the needle and checking the finish of embroidery.

For the machine model with the sub table, fix the sub table securely with it lifted up after threading and/or adjusting the machine.

Do not damage, modify or heat the power or other cables. Do not exert undue force to them, either. Otherwise the cables will be damaged causing fire and electric shock.

Insert the power cable plug fully. If a metallic part touches a blade in the plug, it may cause fire and/or electric shock.

Keep away electrical units from water and chemicals. Entry or splashing of them into control units leads to short circuits, causing fire, electric shock and other troubles. If water or other chemicals enter the unit, shut off the power at the primary power source of the machine and contact your local distributor.

Turn off the primary power source before opening the electrical boxes. Be sure to turn off the power switch of the machine before turning off the primary power source. If not, it may cause electric shock.
1-2. Caution

When operating the machine, the following items must be observed strictly to prevent accidents resulting in injury or death and property damage.

![CAUTION]

- Use the machine with about 70% of the maximum speed as "operation for total fitting" for about two weeks after installing this machine. By performing operation for total fitting, life of the machine will become longer, which will be useful to avoid unexpected troubles.
- Do not use bent needles or needles that are not suitable for the material. Be sure to turn OFF the power switch after working, and turn OFF the primary power supply.
- Do not put things on the table.
- This machine uses strong magnet. This machine including magnet should not be accessed to a cellular phone, an analogue watch, a floppy disk, a magnetic card, magnetic tape or a magnetic ticket.

In addition to full-time leak current, leak electric current generated by harmonics and surge flows in the power cable of the machine. For this reason, if selection and installation of breaker of leak current and leak current relay used for the factory are not correct, malfunctioning of the machine may occur. Regarding connection of power cord, observe the following items.

- Use a breaker of electric current leakage and leak current relay for which measures are taken against harmonics and surge. If you use conventional breaker and relay without such measures, select with sufficient leak current capacity to fill up leak current by harmonics and surge. (In this case, leak current must be controlled constantly satisfactorily.)
- Regarding capacity of electric current leakage for leakage breaker and leak current relay necessary per machine, consult your local TAJIMA distributor.
- For actual product names of breaker of electric current leakage and leak current relay for which measures are taken against harmonics and surge, please consult your local TAJIMA distributor or electric engineers.
- To prevent the machine from property damages (the power decline of the main shaft motor, etc., stop position error and its color change error, design displacement, etc), one embroidery machine should be connected to one no fuse breaker in regard to connecting power harness.
Prevent the operation noise in the environment.
This machine is designed to reduce noise during operation.
To improve the sound insulation performance in a factory still more, use the interior finish materials which show high sound insulating performance for the walls, ceiling, and floor of the factory.

Install the machine on a sturdy floor.
The floor structure must be strong enough to bear the machine weight (indicated on the spec. plate).

Avoid dust and moisture.
Since dust and moisture lead to dirt and rust on the machine, use the machine in an environment of facility of air conditioner, and clean the working place periodically. Use caution not to expose the machine to direct wind from the air conditioner so that embroidery threads do not become disheveled.

Humidity:
30 to 95%RH (relative humidity) without condensation

Ambient temperature:
5 to 40°C (during operation), -10 to 60°C (during storage)

Avoid direct sunlight.
If the machine is exposed to direct sunlight over an extended period of time, the machine body may be discolored or deformed. Put curtains or shades to the site to prevent the machine from direct sunlight.

Provide enough space for maintenance.
Taking account of workability when maintaining and inspecting the machine, provide 50 cm or more working area to right, left and rear directions of the machine against obstacles such as walls.

Pay attention to interference of radio wave.
Although the machine is designed not to affect radio wave interference to other equipments, there could be cases where it causes interference depending on operation environment and type of other equipment. If such problems arise, install the equipment with a space from the machine as big as possible.
2. Important warning items for safe operation (UL-spec. and CSA-spec. machines)

The following contents explains about UL, and CSA spec. machines.

**IMPORTANT SAFETY INSTRUCTIONS**

(applied to UL-spec. and CSA-spec. machines)

UL is safety standard applied to USA and CSA is safety standard applied to Canada.

Read all instructions before using this appliance.

When using an electrical appliance, basic safety precautions should always be followed, including the following:

**DANGER**

To reduce the risk of electric shock:

- An appliance should never be left unattended when plugged in. Always unplug this appliance from the electric outlet immediately after using and before cleaning.

**WARNING**

To reduce the risk of burns, fire, electric shock, or injury to persons:

- Do not allow to be used as a toy. Close attention is necessary when this appliance is used by or near children.
- Use this appliance only for its intended use as described in this manual. Use only attachments recommended by the manufacturer as contained in this manual.
- Never operate this appliance if it has a damaged cord or plug, if it is not working properly, if it has been dropped or damaged, or dropped into water. Please consult the nearest authorized dealer or service center and use this appliance after the examination, repair, electrical or mechanical adjustment has been made.
- Never operate the appliance with any air openings blocked. Keep ventilation openings of the sewing machine free from the accumulation of lint, dust, and loose cloth.
- Keep fingers away from all moving parts. Special care is required around the sewing machine needle.
- Always use the proper needle plate. The wrong plate can cause the needle to break.
- Do not use bent needles.
- Do not pull or push fabric while stitching. It may deflect the needle causing it to break.
- Switch the sewing machine off ("O") when making any adjustments in the needle area, such as threading needle, changing needle, threading bobbin, or changing presser foot, etc.
- Always unplug sewing machine from the electrical outlet when removing covers, lubricating, or when making any other user servicing adjustments mentioned in the instruction manual.
Important warning items for safe operation (UL-spec. and CSA-spec. machines)

Chapter 1

SAVE THESE INSTRUCTIONS

GROUNDING INSTRUCTIONS

(applied to UL-spec. and CSA-spec. machines)

This product must be grounded. In the event of malfunction or breakdown, grounding provides a path of least resistance for electric current to reduce the risk of electric shock. This product is equipped with a cord having an equipment-grounding conductor and a grounding plug. The plug must be plugged into an appropriate outlet that is properly installed and grounded in accordance with all local codes and ordinances.

DANGER

- Improper connection of the equipment-grounding conductor can result in a risk of electric shock. The conductor with insulation having an outer surface that is green with or without yellow stripes is the equipment-grounding conductor. If repair or replacement of the cord or plug is necessary, do not connect the equipment-grounding conductor to a live terminal.
- Check with a qualified electrician or serviceman if the grounding instructions are not completely understood, or if in doubt as to whether the product is properly grounded.
- Do not modify the plug provided with the product - if it will not fit the outlet, have a proper outlet installed by a qualified electrician.
[If the product is used in a nominal rating up to 120V]
This product is for use on a nominal 120V circuit, and has a grounding plug that looks like the plug illustrated in sketch A in Figure-1. A temporary adaptor, which looks like the adaptor illustrated in sketches B and C, may be used to connect this plug to a 2-pole receptacle as shown in sketch B if a properly grounded outlet is not available. The temporary adaptor should be used only until a properly grounded outlet can be installed by a qualified electrician. The green colored rigid ear, lug, and the like, extending from the adaptor must be connected to a permanent ground such as a properly grounded outlet box cover. Whenever the adaptor is used, it must be held in place by the metal screw.

[If the product is used in a nominal rating more than 120V]
This product is for use on a circuit having a nominal rating more than 120V, and is factory equipped with a specific electric cord and plug that looks like the plug illustrated in sketch D in Figure-1. No adapter should be used with this product. If the product must be reconnected for use on a different type of electric circuit, the reconnection should be made by qualified service personnel; and after the reconnection, the product should comply with all local codes and ordinances.
3. Warning labels

The machine has warning labels that bear instructions for safe operation. When using the machine, machine operators must follow the instructions shown on the warning labels.

Do not detach the warning label nor make the printing surface illegible by paint etc. If the warning label is missed or damaged, contact your local distributor.

3-1. Single-head machine

A

Moving parts can cause severe injury.
Do not touch the moving parts during machine operation.

B

Exposed needles can cause severe injury.
Stop the machine before working near the needles.

C

High voltage indication mark

There could be danger of electric shock, burning, or death. Persons except service personnel designated by Tajima should not open covers.

When you open the cover, turn OFF the power switch and wait for four minutes.
3-2. Multi-head machine

A | WARNING • AVERTISSEMENT • WARNUNG • ATENCION • AVISO

Moving parts can cause severe injury.
Do not take off the safety covers or put your hands etc. close to the moving parts during machine operation.

Las partes en movimiento pueden ocasionar lesión grave.
No retire las cubiertas de seguridad ni ponga las manos, etc., cerca de las piezas en movimiento mientras la máquina esté en funcionamiento.

B | WARNING • AVERTISSEMENT • WARNUNG • ATENCION • AVISO

Exposed needles can cause severe injury.
Stop the machine before working near the needles.

C | High voltage indication mark

There could be danger of electric shock, burning, or death. Persons except service personnel designated by Tajima should not open covers.
When you open the cover, turn OFF the power switch and wait for four minutes.

D | Catching mark

There could be danger of being caught or clipped. Other persons than the service personnel certified by TAJIMA should not open the cover.

E | Label E is stuck on 9 or more head machine only.

[Sticking position]
4. Inspection before starting work

Before starting work, execute inspection (including cleaning, lubrication) of each part.

<table>
<thead>
<tr>
<th>Place</th>
<th>Checking</th>
</tr>
</thead>
<tbody>
<tr>
<td>Covers</td>
<td>Are covers attached correctly?</td>
</tr>
<tr>
<td>Upper thread</td>
<td>Is thread passed to each part correctly?</td>
</tr>
<tr>
<td></td>
<td>Is tension adequate?</td>
</tr>
<tr>
<td></td>
<td>Does thread entwine around frame/drive system?</td>
</tr>
<tr>
<td>Under thread</td>
<td>Is under thread (bobbin case) set to rotary hook correctly?</td>
</tr>
<tr>
<td></td>
<td>Is tension adequate?</td>
</tr>
<tr>
<td>Needle</td>
<td>Is needle bent?</td>
</tr>
<tr>
<td></td>
<td>Is direction of needle correct?</td>
</tr>
<tr>
<td></td>
<td>Is needle broken?</td>
</tr>
<tr>
<td>Rotary hook (p.207)</td>
<td>Is cleaning/lubrication performed in adequate frequency?</td>
</tr>
<tr>
<td>Tension base switch (p.64)</td>
<td>Is the switch of head to use turned ON?</td>
</tr>
<tr>
<td></td>
<td>Is the switch of unused head turned OFF?</td>
</tr>
<tr>
<td>Needle bar suspension lever (p.65)</td>
<td>Is the lever of head to use set to ON?</td>
</tr>
<tr>
<td></td>
<td>Is the lever of unused head set to OFF?</td>
</tr>
<tr>
<td>Middle thread guide adjusting lever (p.65)</td>
<td>Is position correct?</td>
</tr>
<tr>
<td>Jog remote-controller (p.25)</td>
<td>Is it contained in the pocket?</td>
</tr>
</tbody>
</table>

![Diagram of machine parts](image-url)
Chapter 2
Name and the way to use of each part

1. Name of each part .................................................................14
2. How to use each part .............................................................16
1. Name of each part

1-1. Single head machine

1. Thread course
2. Operation panel (p.16)
3. Head (p.64)
4. Needle Base LED Lamp (p.21)
5. Emergency stop switch (p.21)
6. Stand (option)
7. Cylinder bed
8. Start/stop switch (p.66)
9. Power switch (p.34)
10. Caster
11. Vibration-preventive base
1-2. Multi-head machine

1. Y-axis motor
2. Thread course
3. Operation panel (p.16)
4. X-axis motor
5. Power switch (p.34)
6. Emergency stop switch (p.21)
7. Start/stop switch (p.66)
8. Border frame
9. Head (p.64)
10. Cylinder bed
11. Table up/down device (p.23)
2. How to use each part

2-1. Operation panel

[Front face]
Various types of key operation (p.17)

[Side face]
USB port (p.18)

[Back face]
USB port, LAN port (p.19)
2-1-1. Front face

1. Sleep mode key (p.20)
   Switch to power save mode. To release, press this key again.

2. Condition of the machine
   AS (Auto start)
   To perform: lit
   Not to perform: unlit
   FB (Frame back/forward) (p.67)
   Frame back: lit
   Frame forward: unlit
   (Main shaft stop position)
   Fixed position: lit (normal)
   Other than the fixed position: unlit (abnormal)
   Lower dead point, or main shaft brake "NO": blinking
   FDD
   Not used currently
   USB port
   During operation: lit

3. Design confirming mode key(p.55)
   The detail of the design to be embroidered from now can be checked.

4. Jog dial
   Move the frame at low speed. Adjust the value frame by frame.
   It is illustrated as below in this manual.

5. Jog shuttle
   Move the frame at high speed. Fast-forward the value.
   It is illustrated as below in this manual.

6. Escape key (E key in a sentence)
   The original screen will be returned. Release the stop factor.

7. Set key
   Decide the value.

8. Frame travel key(p.58)
   Move the frame manually.
2-1-2. Side face

(1) USB port
There are two spots (side face, back face). It is not possible to use at these two spots at the same time.
USB port is used for the following cases.
• When connecting a USB memory
• When connecting the bar code reader (commercial item)

(2) USB memory
Please prepare a commercial item.
• When registering a design, stored in a USB memory, in the memory of the machine
• When storing the design, stored in the memory of the machine, in the USB memory
• When installing the software in the machine
Some type and/or capacity of USB memory may not be used for this machine. In this case, please buy USB memory recommended by Tajima. For details, please consult the distributor.
About a use of USB memory, observe the items to notice described below.

⚠️ CAUTION

- Do not turn ON the machine power in the state that the USB memory is connected to the operation panel except when installing the software in the machine. The system sometimes may not start up.
- Do not pull out/in the USB memory during operation (when the main shaft motor and frame are moving, or in the middle of color change etc.). Inside card could be damaged.
2-1-3. Back face

(1) LAN port
Use the LAN port when connecting the LAN cables.

(2) LAN cable
Please prepare a commercial item. LAN cable is used for connecting a personal computer with the machine. Setting of the operation panel is necessary additionally (p.180).

(3) USB port
Refer to the explanation of the USB memory at the side face of the operation panel (p.18).

---

**CAUTION**

- When you insert the USB memory, do not mistake the direction of connector. The USB memory and its inside card could be damaged.
- Do not insert the USB memory in the state that dirt or dust are attached to the inside of the connector.
- Insert the USB memory slowly and gently.
- Insert the USB memory upright against the port (insert slot). Oblique insertion could damage to inside card due to interference of connector with the card.
- Wait for five or more seconds after inserting or taking out the USB memory, and then start operation. It may take about one minute at a maximum to recognize data.
2-2. Sleep mode key

Setting the machine to sleep mode at intermission etc. will suppress unnecessary power consumption.

2-2-1. How to switch to the sleep mode

(1) Set the screen to the main screen.

(2) Press the sleep mode key long. The sleep mode key will light up in red.

2-2-2. How to cancel the sleep mode

Press the sleep mode key. The sleep mode key will be unlit. (Cancellation will be completed.)

When the following message will be displayed after the cancellation, press the SET key. Pressing the SET key will move the frame.

This message will be displayed in single-head machine only.

It is displayed only when "Frame origin memory with the power ON" is set to "YES" (p.149).

Regarding "Frame origin memory", refer to the detail page (p.148).

CAUTION

⚠️ When performing this operation, do not put your hands etc. on the machine table. Moving frame could injure you.
2-3. Emergency stop switch

Emergency stop switch is equipped as a measure for safety. Pressing this switch will stop the machine. Since the switch is in the locked state, release it according to the following procedure. After releasing, the operation can be started as usual.

<table>
<thead>
<tr>
<th>Spec. of the machine</th>
<th>Condition after stop</th>
<th>How to release</th>
</tr>
</thead>
<tbody>
<tr>
<td>EN-spec. (European safety spec.)</td>
<td>The power is turned OFF.</td>
<td>(1) Turn the switch clockwise. (The power will be turned ON).</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(2) Start the operation.</td>
</tr>
<tr>
<td>Excluding EN-spec., and Japanese domestic use</td>
<td>The machine will switch to the sleep mode.</td>
<td>(1) Turn the switch clockwise.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(2) Press the sleep mode key.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>It takes a while until the sleep mode is released.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(3) Start the operation.</td>
</tr>
</tbody>
</table>

2-4. Needle Base LED Lamp

Needle Base LED Lamp is equipped to the single head machine.
2-5. Main shaft handle, Color change handle (Single-head machine only)

2-5-1. Color change handle

Turning this handle by hand will cause the needle bar case to slide. It is possible to slide the needle bar case only when the main shaft angle is set to the fixed position. Fix the handle at the position where the screw faces directly above (odd-numbered needle) or directly below (even-numbered needle).

![Color change handle](image)

2-5-2. Main shaft handle

Turning this handle by hand will cause the needle bar to lower.

When turning this handle with the power ON, follow the procedure below.

(1) Press F3 key while pressing SET key.

(2) Select “2 Weak brake”, and press Set key.

(3) Select “NO” in the below screen, and press SET key.

![Main shaft handle](image)
How to use each part

(4) Push the handle and turn it to the direction indicated by an arrow.

(5) To finish working, adjust the main shaft angle in the screen to 100°.

(6) Press E key.

2-6. To move Up/Down the table (Multi-head machine only)

The device will work only under the following conditions.
When the frame is positioned at the reamost.
When Table Up/Down is set to “YES”. (p.186)
2-6-1. How to operate

**CAUTION**

- When performing this operation, do not put your hands etc. on the machine table. Moving up/down table could injure you.
- Do not operate the machine under the following condition. The frame or its surrounding parts could be broken.
  - In the state that the frame is equipped
  - In the state that the rotary hook is opened
  - In the state that the toggle clamp is fixed

1. Move the frame to the rearmost position by Manual Frame Travel.
2. Press D2 key.
3. Select “3 Table Up/Down” and press SET key.
4. Select “○” and press SET key.
5. Perform Table Up/Down.
6. After moving up the table to the uppermost, fix the toggle clamp.
2-7. Option and others

2-7-1. Jog remote-controller (some models only)

This is a device to move the frame manually. Regarding how to use, refer to the detail page (p.59).

When not using, put it in the pocket.

Pocket

2-7-2. Bar code reader

Register a design in the memory of the machine by using the bar code reader. Please buy a corresponding product to the USB port. We do not sell it. Regarding how to use, refer to the detail page (p.45).

Bar code

Connect it to the USB port (back face) (p.19).
Chapter 3
Screen

1. Screen display .................................................................28
2. Message display ..............................................................31
1. Screen display

1-1. Main screen

When the power is turned ON, the following screen will appear. From this screen, setting/operation to
embroider will start. To return to the main screen from other screen, press E key until the main screen
appears.

1-1-1. Explanation on the screen

At cap frame spec., setting "Design rotation by 180°
degree" to "YES" will rotate the design by 180°
degree (p.144).

1. Design name
2. Design (of which data is set) to be
embroidered from now
3. The number of total stitches of design
5. Setting for automatic offset (p.153)
   - Existence : Absence
6. Needle bar No. selected in every step
   (p.51)
7. Setting to return the frame to the front
during embroidery (p.155)
   - With setting
8. Frame that is currently set
   - Tubular goods frame
   - Border frame
   - Cap frame
   - Cylindrical frame
   - X-EXT X-extension unit
   - Tubular goods auto clamp frame
   - Border frame auto clamp frame
9. Software Frame Limit (p.87)
   - With setting
10. Current number of stitches
11. Current frame position (mm)
12. Maximum speed (p.62)
   During stop
   Maximum speed will be displayed.
   During operation
   The actual embroidery speed will
   be displayed.
13. Start position of design
14. Ratio of finish of embroidery
**1-2. List screen**

1. Cursor
   - Selected item will be displayed in yellow.
   - To lower the cursor, press B key or .
   - Pressing [SET] will switch to "Setting screen".

**1-3. Setting screen**

1. Select YES/NO by using the jog dial and press SET key.

To lower the cursor, press SET key or .
To return the screen, press the E key.

**1-4. Character/numeric value input screen**

1. File name (up to 8 characters)
2. To return the cursor, to delete a character
3. To decide a character and a numeric value input
4. Switching of large letter/small letter

[How to input]

After finishing input, press Enter and SET key.
1-5. Design confirming screen

It is possible to check setting contents of design starting to embroider from now and/or occurrence records of stop factor(s) (Error Stack).

To switch to design confirmation screen, press i key. Pressing again i key will switch to the next screen. To return the original screen, press E key.

1. Design (of which data is set) to be embroidered from now
2. File name
3. Design size
4. The number of total stitches of design
5. Current frame position
6. Distance from design start point
7. Current number of stitches
8. Contents of the current stitch
9. The number of times of embroidering this design continuously
10. The number of steps
11. Automatic offset
12. Current step (red)
13. Auto. Color Change Offsetting

Pressing key will scroll the page.

14. Stop factor occurred at last (p.193)
2. Message display

2-1. Condition data

When registering a design (storing mode is T3, or T2 design) stored in USB memory into the memory of the machine, the following message will appear.

Condition data means the following two items in this case.

(1) Color change order
The whole color change order included in the design can be registered in the memory of the machine. Therefore, it is unnecessary to set again.

(2) Start position of design
The frame position where the machine started embroidering last time can be registered in the memory of the machine. Therefore, it is unnecessary to adjust position of the frame.

There are following three items of condition data except the one described above. By setting them after data set, each setting contents will be added in a design. Therefore, it is unnecessary to perform setting again when you embroider this design next time.

(1) Enlargement/reduction/reversion of design (p.92)
(2) Repeat of design (p.94)
(3) Automatic offset (p.153)

2-1-1. When reading a design (Example: TAJIMA_W), stored in USB memory, by a personal computer

Indications in a personal computer are different as shown in the chart below depending on the storing mode (T3, T2, T) of the design.

<table>
<thead>
<tr>
<th>Storing mode</th>
<th>Indication in a personal computer</th>
<th>Application</th>
</tr>
</thead>
<tbody>
<tr>
<td>T3</td>
<td>TAJIMA_W.TCF</td>
<td>Data integrating CT0, DGF and TBF of T2</td>
</tr>
<tr>
<td>T2</td>
<td>TAJIMA_W.CT0</td>
<td>Color change order, design start point</td>
</tr>
<tr>
<td></td>
<td>TAJIMA_W.DGF</td>
<td>Image data on a personal computer</td>
</tr>
<tr>
<td></td>
<td>TAJIMA_W.TBF</td>
<td>Stitch data of TAJIMA binary format</td>
</tr>
<tr>
<td>T</td>
<td>TAJIMA_W.DST</td>
<td>Stitch data of TAJIMA ternary format</td>
</tr>
</tbody>
</table>

[About T2]
One design will be generated by three types of file indication (TAJIMA_W.CT0, TAJIMA_W.DGF, TAJIMA_W.TBF). Therefore, please handle these three files as a set.
2-1-2. Storing or reading of condition data

Condition data can be stored or cannot be stored depending on its place to store.

〇: storable/ ×: Not storable

<table>
<thead>
<tr>
<th>Condition data</th>
<th>Storing to the memory of the machine</th>
<th>Storing to a USB memory</th>
<th>Storing from DG/ML by pulse to memory of the machine</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Color change order</td>
<td>〇</td>
<td>〇</td>
<td>×</td>
</tr>
<tr>
<td>2. Start position of design</td>
<td>〇</td>
<td>〇</td>
<td>×</td>
</tr>
<tr>
<td>4. Repeat of design</td>
<td>〇</td>
<td>×</td>
<td>×</td>
</tr>
<tr>
<td>5. Automatic offset</td>
<td>〇</td>
<td>×</td>
<td>×</td>
</tr>
</tbody>
</table>

*1: When you embroider the design between the models with different embroidery spaces, the start position of the design may differ depending on the model.

*2: Enlargement/reduction/rotation/reversion of design

2-2. Start position of design

The message shown left will be displayed only when the machine reads condition data at "2-1.". This message is displayed when setting data of design. Design start position means the frame position where this design was started embroidering last time.

OK to move a frame to the Start Point of Design Data?

[X:+115.7 Y:-153.2]

"YES" >> SET
"NO" >> E

These figures mean the place to move of the frame. Frame coordinates of it are shown.

2-3. Offset return

The message shown left will be displayed only when the machine has the setting of "Automatic offset" (p.153). This message is displayed when setting data of design. Offset return means the offset start position where this design was embroidered last time.

OK to execute offset return?

[X:+65.2 Y:-180.5]

"YES" >> SET
"NO" >> E

These figures mean the place to move of the frame. Frame coordinates of it are shown.
Chapter 4
To embroider

1. Turn ON the power .................................................................34
2. To pass thread, to set fabric......................................................37
3. To register a design in the memory of the machine..................40
4. To decide a design to embroider and the color change order......48
5. To decide the design start position ...........................................55
6. Checking items before embroidering .......................................62
7. Embroidery starts.....................................................................66
1. Turn ON the power

**CAUTION**

Do not turn ON the machine power in the state that the USB memory is connected to the operation panel except when installing the software in the machine. The system sometimes may not start up.

1-1. Power switch

There are following types of the power switch depending on the model.

1-1-1. Single-head machine

<table>
<thead>
<tr>
<th>ON</th>
<th>OFF</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image1" alt="Single-head machine ON" /></td>
<td><img src="image2" alt="Single-head machine OFF" /></td>
</tr>
</tbody>
</table>

1-1-2. Multi-head machine

<table>
<thead>
<tr>
<th>ON</th>
<th>OFF</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image3" alt="Multi-head machine ON" /></td>
<td><img src="image4" alt="Multi-head machine OFF" /></td>
</tr>
</tbody>
</table>

This type can be locked.
(1) Turn the handle toward direction A to the position of the groove.

(2) Push the lock plate to the direction indicated by a big arrow and return the handle to the direction B (the original position).

(3) Lock.
### 1-2. Turn ON the power

**(1)** After turning on the power, the screen will switch as the figure below. Wait for a while until the power starts up.

When performing this operation, do not put your hands etc. on the machine table. Moving frame could injure you.

(2) When the power starts up, the following message will appear. Then, press SET (This message will not be displayed in multi-head machine).

**CAUTION**

- When performing this operation, do not put your hands etc. on the machine table. Moving frame could injure you.

This operation is for grasp of the frame position correctly and it is displayed every time when the power is turned ON.

This message will be displayed only when "Frame origin memory with the power-ON" is set to "YES".(p.149)

When this message is not desired to display, set to "NO".

If the screen (main screen) as shown left is displayed, preparation is completed.
2. To pass thread, to set fabric

2-1. To pass thread

Thread correctly at tension part (indicated by arrows). Otherwise it affects finishing of sewing.
To pass thread, to set fabric

Chapter 4

CAUTION

⚠️ Pass the thread to the thread take-up spring and the upper thread lock surely. Otherwise it would cause the thread breakage or affect the thread tension badly.

⚠️ Return the adjusting lever to the original position after passing the thread. Otherwise it would cause the thread breakage or affect the thread tension badly.

How to use adjusting lever

1. To raise the lever

2. To pass the thread

3. Return the lever after threading. (The screw should face to the front.)
2-2. To set the fabric to the embroidery frame

To make finishing of embroidery beautiful or to perform efficient works by reducing the thread breakage, it is important to stretch the fabric correctly on the embroidery frame. Fix the fabric in the state of full stretch so that no lines remain on the fabric.

Regarding how to stretch the fabric and replace the embroidery frame, refer to the separate manual "FRAME REPLACEMENT".

[Typical example]

The visor of the cap should be touched the below guide.

The frame should be fixed at section A and B in the figure below.

Use the clip as shown in the figure below.
3. To register a design in the memory of the machine

Register a design into the machine memory by the following ways.

(1) To use USB memory

(2) Use a personal computer (DG/ML by Pulse is necessary)

3-1. To use USB memory (Data Input USB)

Register designs, stored in the USB memory, into the memory of the machine. The maximum number of stitches per design of which data can be input is 1,000,000 stitches.

3-1-1. Explanation on the screen

- **Layer directory**
  - The machine can read the design (the fourth layer directory) in the folder located at the third layer directory stored in the USB memory. The total amount of folders or designs which can be read in one layer directory is 255 designs at the maximum.
    - \ : First layer directory
    - \ \ : Second layer directory
    - \ \ \ : Third layer directory
    - \ \ \ \ : Fourth layer directory

- **Folder**

- **Design**
  - The extension differs depending on a storing mode of the design.
    - T3 : TCF
    - T2 : TBF
    - T : DST
  - For storing mode of the design, refer to the detail page.(p.31)
To register a design in the memory of the machine

Chapter 4

3-1-2. How to operate

The following is an example when registering a design (stored in a USB memory) in the memory of the machine.

(1) Set a USB memory.

(2) To open screen

(3) Select a design

The operation differs depending on a storing place for the design.

(a) Design in a folder

Pressing SET will display the folder or the design of the second layer directory. To return to the original layer directory, press E key.
(b) Design on the screen

Pressing i key will display the design confirmation screen (p.30).
To return the original screen, press E key.

(4) To register a design in the memory of the machine

If the storing mode of the design is T3 or T2, the following message will appear.

Condition data means the start position of the color change order and the design.

After that, proceed to "To decide a design to embroider (Data setting) (p.48)".
3-2. To use a personal computer (Data Input Lan)

Register designs (stored in the personal computer) into the memory of the machine. The maximum number of stitches per design is 800,000 stitches.

Software sold separately (DG/ML by Pulse) and setting of IP address is necessary to perform this operation. For details, please consult the distributor.

[Example of connection]

3-2-1. Explanation on the screen

3-2-2. How to operate (not to use the bar code reader)

The following is an example when registering a design (stored in a personal computer) into the memory of the machine.

(1) After connecting the LAN cable to the LAN port at the back of the operation panel, start up DG/ML by Pulse.

(2) Check if network setting is "YES" (p.180).

(3) To open screen
To register a design in the memory of the machine

(4) Select a design

(5) To register a design into the memory of the machine

This design has become the state that it is possible to embroider (Data set is completed).
After that, proceed to "To change color automatically / to start operation automatically (Auto Color Change "AC / Auto Start "AS") (p.53)".

Condition data means the color change order.
3-2-3. How to operate (to use bar code reader)

The following is an example when registering a design (stored in a personal computer) into the memory of the machine.

(1) After connecting the LAN cable to the LAN port at the back of the operation panel, start up DG/ML by Pulse.

(2) Check if network setting is "YES" (p.180).

(3) Connect the bar code reader to the USB port of the operation panel (p.19).

(4) To set to main screen

Reading of the bar code is also possible from the following screen.

(5) To read bar code

Condition data (color change order) is also read automatically.

Bar codes can be printed by the print function of DG/ML by Pulse.

This design has become the state that it is possible to embroider (Data set is completed). After that, proceed to "To change color automatically / to start operation automatically (Auto Color Change "AC / Auto Start "AS") (p.53)".
3-2-4. How to operate (To use bar code reader during operation)

During working, read the bar code of a design to embroider next by a bar code reader. (A read design is called Pre-reading design.)

Currently, at the end point where embroidering design is finished, a pre-reading design is set, then yellow bar will be displayed.

When the following operation is performed, the yellow bar will disappear.

(a) When operation on the panel is performed
(b) When the machine is started/stopped
(c) When the power is turned ON again

There are following conditions for pre-reading design.

(a) Pre-reading is available in one design only.
(b) When reading the bar code plural times during operation, the design read finally will be selected.
(c) When a design embroidering is interrupted during the operation and the data of the other design is set, a pre-reading design will be deleted.
(d) When a design embroidering is interrupted during the operation and the data of a pre-reading design is set, read the bar code again.
(e) When frame forward is performed at the design while embroidering and the end code is output, the data of a pre-reading design will not be set.
To register a design in the memory of the machine

If the bar code cannot be read, error code No.BC1 will be displayed. The following points are given as factors.

(a) Selected design is not stored in Spooler

Spooler: area to store the design temporarily in a personal computer

(b) Misreading of bar code reader

Deal with the following procedure. If the problem is not solved, please consult the distributor.

Error code No.BC1

Press E key.
(Resetting error)

Design data transmission to Spooler

To perform

Transmit design data to Spooler.

Not to perform

Rereading of bar code

Success

Completion of data set

Failure

A-5: Switch to data input (LAN) screen and select the design manually.

Press SET key.

"OK to execute ?" will be displayed.

Press SET key.

"Read condition data ?" will be displayed.

Press SET key.

Completion of data set
To decide a design to embroider and the color change order

4. To decide a design to embroider and the color change order

4-1. To decide a design to embroider (Data Setting)

Select the design in the memory of the machine and enable to embroider.

4-1-1. Explanation on the screen

[a] Layer directory

The design stored in the memory of the machine can be displayed down to the second layer directory.

\ : First layer directory
\\ : Second layer directory

[b] Folder

Folder name can be changed (p.166).

[c] Design registered in the memory of the machine

Machine memory registration No. With setting for enlargement/reduction/reversion of design

File name With setting for repeat of design

2[CR]  G001.TCF  TAJIMA_W
           14117 Design name (up to 8 characters)

The number of total stitches of design
To decide a design to embroider and the color change order

Chapter 4

4-1-2. How to operate
This is an example when selecting the design in the memory of the machine and enabling to embroider.

(1) To open screen

(2) Select a design
The operation differs depending on a storing place for the design.

(a) Design in a folder

(b) Design on the screen

Pressing SET will display the folder or the design of the second layer directory. To return to the original layer directory, press E key.

Pressing i key will display the design confirmation screen (p.30). To return the original screen, press E key.
(3) To decide a design to embroider

**CAUTION**

⚠️ When performing this operation, do not put your hands etc. on the machine table. Moving frame could injure you.

Are you ready?  ➔  SET  ➔  OK to move a frame to the Start Point of Design Data?

Pressing SET will move the frame, then data set will be completed.

When the move of the frame is not desired  ➔  E

---

To decide a design to embroider and the color change order

Chapter 4
4-2. To decide color change order (Needle Bar Selection)

This setting is unnecessary when the color change order is already included as the condition data in the design to be embroidered from now.

4-2-1. Explanation on the screen

[a] Design to be embroidered from now

[b] Step

The section divided by color change code in the design data. The first section is called step 1, and the next section is called step 2.

Step display differs depending on with/without setting of "Auto Color Change (AC)".

[c] Offset mark

The illustrated example shows that the frame moves to the front automatically after finishing of step 3 (p.155).

However, to move the frame, the setting of "Automatic Offset" is necessary (p.153).
4-2-2. How to operate (not to insert the offset mark)

The following is an example when setting step 1 to the needle bar No.4.

(1) To open screen

(2) To select the needle bar No. to use at the step 1

Set also other needle bar No. in the same procedure.

4-2-3. How to operate (to insert the offset mark)

The following is an example when insert the offset mark between step 2 and step 3.

(1) To select the step to insert the offset mark

The offset mark is inserted between step 2 and step 3 in this example.

(2) To insert the offset mark

To delete the offset mark
4-3. To change color automatically / To start operation automatically
(Auto Color Change "AC" / Auto Start "AS")

4-3-1. Explanation on the screen

[a] Setting to perform color change automatically according to color change order
   YES: to perform
   NO: not to perform
   When you desire to embroider without color change by single color, select "NO". Selecting "NO" will disable the following settings.

[b] Setting to start operation automatically after color change
   YES: to perform
   NO: not to perform
   Selecting "NO" will disable the following settings.

[c] Setting to start operation automatically when the same needle bar No. is selected at before-and-after steps.
   YES: to perform
   NO: not to perform
   The below example shows that selecting "NO" will stop the operation after step 1 finishes. When you desire to stop the desired step only individually, select "NO".

The same needle bar No.
To decide a design to embroider and the color change order

**4-3-2. How to operate**

The following is an example when setting to the following condition.
- To perform automatic color change
- To perform automatic start
- Starts automatically at same color

1. **To open screen**

![Diagram](image1)

2. **To perform automatic color change**

![Diagram](image2)

3. **To perform automatic start**

![Diagram](image3)

4. **Starts automatically at same color**

![Diagram](image4)
To decide the design start position

Chapter 4

5. To decide the design start position

5-1. To check the design size and the setting contents of the design (Check of design)

Check setting conditions such as size, scale up/down, repeat, etc of the design to be embroidered from now. Use the checking result as rough standard when deciding the design start position. This function will be explained in detail on the other page (p.30).

5-1-1. Explanation on the screen

Design to be embroidered from now

Enlargement/reduction/reversion of design

Repeat of design

Start position of design

The size based on the design start position after scaling up/down will be displayed. This example shows the size of lengthwise 88.4 mm and crosswise 118.8 mm.

5-1-2. How to operate

(1) To open screen

Press i key.

After pressing this key again, setting contents in detail and the code No. occurred up to now can be confirmed.

To return the main screen, press E key.
5-2. To lower the needle bar to adjust the frame position (Needle bar operation)

This function corresponds to the multi-head machine only.

5-2-1. Explanation on the screen

<table>
<thead>
<tr>
<th>10 Needle bar operation up</th>
<th>Up: To raise the needle bar</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Down: To lower the needle bar</td>
</tr>
</tbody>
</table>

5-2-2. How to operate

**CAUTION**

⚠️ When performing this operation, do not put your hands etc. near the needle. Moving up/down of the needle bar could injure you.

The following is an example when lowering the needle bar.

(1) To open screen

D1

10 Needle bar operation Up

(2) To lower the needle bar

When pressing the SET key, needle bars of all heads will move down.
To decide the design start position

5-3. To move the frame to the design start position (Manual frame travel)

This operation is unnecessary when the frame has already come to the start point of the design by the operation described previously.

5-3-1. Explanation on the screen

Main screen

The current frame position is displayed by the numerical value (mm). The frame position is based on the frame origin.

The code (+/-) means the frame travel direction.

[Relation between frame travel direction and code]

(1) If the frame moves to the rear, the mark will be "Y:-".

(2) If the frame moves to the front, the mark will be "Y:+".

(3) If the frame moves to the right, the mark will be "X:-".

(4) If the frame moves to the left, the mark will be "X:+".
5-3-2. How to operate

There are following three ways.

<table>
<thead>
<tr>
<th>CAUTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>When performing this operation, do not put your hands etc. on the machine table. Moving frame could injure you.</td>
</tr>
</tbody>
</table>

(1) To use frame travel key

(a) Switch to main screen
   Press E key plural times to switch to the main screen.

(b) To move the frame to design start position
   Press the desired key. The frame will move.

(2) To use Jog dial /Jog shuttle

(a) Switch to main screen
   Press E key plural times to switch to the main screen.

(b) To decide the frame travel direction
   Press E key to decide frame travel direction.

When you want to change the frame travel speed, press the speed switching key. The key will light on/off.

Lit: fast
Unlit: slow

It moves vertically. It moves horizontally.
To decide the design start position

(c) To move the frame to design start position
   Turn the jog dial (low speed) / the jog shuttle (high speed). The frame will move.

(b) To move the frame to design start position
   Tilt the stick. The frame will move.

   Frame travel speed will be changed by degree of leaning condition of the stick.

(3) To use Jog remote-controller (some models only)

(a) Switch to main screen
   Press E key plural times to switch to the main screen.
5-4. To check if the design fits in an embroidery space (Trace)

Since the frame moves according to the size of the frame, you can check if the design fits in the embroidery space or not.

The number in the left picture indicates the path of the frame. After completion of trace, embroidering from that position is possible.

5-4-1. Explanation on the screen

Current needle bar No.
The frame moves on the basis of this needle bar.

Speed of frame travel
- Low: slow
- High: fast
- Not to execute

5-4-2. How to operate

The following is an example when executing trace.

(1) To open screen

Caution: When performing this operation, do not put your hands etc. on the machine table. Moving frame could injure you.
To decide the design start position

(2) To execute

To execute

When the tracing is impossible due to the design size exceeding the embroidery space, follow the procedure below.

(a) The frame will move again after stopping temporarily.

(b) Code No.225 will be displayed.

Press E key.

(c) After checking the size of the design, move the frame to the design start position.

(d) Perform tracing again.

To interrupt trace, follow the procedure below.

(a) Suspend the operation by the bar switch or the stop switch.

Code No.1C1 will be displayed.

While a code No.1C1 is displayed, do not turn OFF the power.

(b) Press E key.

(c) After that, follow the message described below.

OK to continue Tracing?

To continue => SET key
To suspend => E key

"YES">>SET
"NO">>E
6. Checking items before embroidering

6-1. Maximum speed (Max revolution)

The value set here will be the maximum speed of the machine. It is automatically increased/decreased depending on stitch length in the middle of embroidery.

6-1-1. Explanation on the screen

<table>
<thead>
<tr>
<th>Stitch Length</th>
<th>Embroidering speed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Up to 4.0 mm</td>
<td>Maximum speed (A in the right figure)</td>
</tr>
<tr>
<td>4.1 mm to 11.9 mm</td>
<td>Automatic change (B in the right figure)</td>
</tr>
<tr>
<td>12.0 mm and more</td>
<td>Low speed (C in the right figure) (p.83)</td>
</tr>
</tbody>
</table>

During stop: The maximum speed is displayed. During operation: Actual operating speed is displayed.

[a] Maximum speed

6-1-2. How to operate

The following is an example when setting the maximum speed to "950".

(1) To open screen
(2) Select maximum speed
Selection of the value exceeding "Max. Revolution Limit" is not possible.

While turning the dial, the following display appears.
The number described in [ ] is the maximum speed.

When changing the maximum speed during operation, turn the jog dial/jog shuttle.
6-2. Embroidery head

Check the position of the following tension base switch, the needle bar suspension lever, the middle thread guide adjusting lever before embroidering.

When the head to embroider is under the following condition, embroidering is possible.

**Single-head machine**: In the state that the tension base switch is ON

**Multi-head machine**: In the state that the tension base switch and the needle bar suspension lever is ON

(1) Tension base switch

This switch will suspend the head electrically.

The switch manipulation during operation of the machine is invalid. Even if the switch manipulation is performed, it will become effective after the machine stops.

<table>
<thead>
<tr>
<th>Thread breakage indicator lamp</th>
<th>Tension base switch</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lit in green</td>
<td>In the state of embroidery possible</td>
</tr>
<tr>
<td>Unlit</td>
<td>In a state of suspending embroidery (needle bar will not move down)</td>
</tr>
<tr>
<td>Blinking in green[*1]</td>
<td>Frame back section at the head without thread breakage. The lamp at the head without thread breakage blinks in green during frame back.</td>
</tr>
<tr>
<td></td>
<td>Regarding frame back, refer to the detail page (p.67).</td>
</tr>
<tr>
<td>Lit in red</td>
<td>Upper thread breakage</td>
</tr>
<tr>
<td>Blinking in red</td>
<td>Under thread breakage</td>
</tr>
</tbody>
</table>

*1: Multi-head machine only
Checking items before embroidering

(2) Needle bar suspension lever (equipped only to the multi-head machine)
This lever will suspend the head mechanically.

It is located at the left side of the head.

(3) Middle thread guide adjusting lever
Move the lever so that the screw faces to the front.

If embroidery is performed under the following condition, it could affect to thread breakage or thread tension badly.
7. Embroidery starts

7-1. Start and stop

7-1-1. Start/stop switch

CAUTION

Before starting the machine, pay enough attention to the surrounding safety. Moving needle bar and/or frame could injure you.

(1) When starting the operation, press the start switch.

(2) To stop the machine, press the stop switch.

(3) To start slow operation, keep on pressing the start switch. Releasing it will become normal operation.

Single-head machine

Multi-head machine
7-2. Frame back (to return the frame) / Frame forward (to advance the frame)

Frame Back
This function will return the frame to the direction where stitches return with the needle bar stopped.
Frame back is performed when thread breaks, and the mend sewing is performed from that position only at the head with thread breakage.

Frame forward
This function will move the frame to the direction where stitches advance with the needle bar stopped.
The frame can be moved immediately to the embroidery start point when you want to start from the middle of embroidery.

There are following two types of execution of frame back/forward.

(1) Operation by operation panel
This function executes by color change unit or by specifying the number of stitches (p.137).

(2) Operation by stop switch or bar switch
The machine will execute FB/FF by 1-stitch or setting unit (Explanation is given as follows).

[Current setting condition]
Setting condition of frame back/forward can be checked by the operation panel (p.17).
When switching frame back and frame forward, refer to the detail page (p.136).
If the machine detects thread breakage, frame back will be set temporarily.

7-2-1. Frame back/forward by stop switch

![CAUTION]

When performing this operation, do not put your hands etc. on the machine table. Moving frame could injure you.

<table>
<thead>
<tr>
<th>Press the stop switch and release immediately during stop.1</th>
<th>Frame back or frame forward will be performed by 1-stitch unit depending on the current setting condition.</th>
</tr>
</thead>
</table>
| Keep on pressing the stop switch during stop.1            | Frame back or frame forward will be performed in consecutive movement depending on the current setting condition.  
The machine will continue FB/FF by 1-stitch unit in case of within 10 stitches. Releasing it will suspend FB/FF.  
The machine will continue FB/FF by setting unit in case of 11 stitches or more (p.139).  
Releasing will not suspend working. When suspending, press the stop switch again. |
7-3. The countermeasure when thread breaks

The machine will stop automatically and will be the following condition.

(1) The thread breakage indicator lamp lights in red or blinks in green.
   - Lit in red: upper thread is broken
   - Blinking in red: under thread is broken

(2) Code No. (number indicating stop factor) will be displayed on the operation panel.
   - [291]: Upper thread is broken
   - [293]: Under thread is broken
After that, restart the embroidery according to the following procedure.

(a) Pass the upper thread, or change the under thread (bobbin).

(b) Start the operation after performing frame back by several stitches.

[Head with thread breakage]

The machine restarts embroidery from the position where frame back stopped (1 in the figure below). As a result, mend sewing will be performed at the position 2 without sewing due to thread breakage.

[Head without thread breakage (In case of multi-head machine)]

The machine restarts embroidery from the position 3 next to where frame back started. This example is for the case "All head sewing after frame back" is set as "0" (p.140).
To make the head without thread breakage embroider from the position where frame back is stopped, set the tension base switch of the head to the “Top” once (when you release the switch, it will return to the original position).

**Tension base switch**

Thread breakage indicator lamp will change from green to red.

### 7-4. Completion of embroidery

Destination to move of the frame differs depending on setting of the machine.

<table>
<thead>
<tr>
<th>Setting for automatic offset</th>
<th>With</th>
<th>Without</th>
</tr>
</thead>
<tbody>
<tr>
<td>The frame will move to the offset start position.</td>
<td><img src="image" alt="Frame travel" /></td>
<td>The frame will not move.</td>
</tr>
</tbody>
</table>

Frame travel

However, when automatic origin return is set, the frame will move to the design start position.
Chapter 5
Functions concerning embroidery

1. To change color .................................................................72
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1. To change color

1-1. To change color manually (Manual Color Change)

1-1-1. Explanation on the screen

1-1-2. How to operate

CAUTION

When performing this operation, do not put your hands etc. around the needle bar case. Moving needle bar case could injure you.

The following is an example that the needle bar is changed color to the 5th needle.

(1) To open screen

(2) To select needle bar No. and execute color change

Pressing SET key will move the needle bar.
2. To trim thread

2-1. To trim thread manually (Manual Thread Trimming)

2-1-1. Explanation on the screen

![Diagram of manual thread trimming screen]

- O : To trim thread
- Under thread: To trim under thread only
(Multi-head machine only)
If turning the jog dial while pressing "SET" with "－" indicated, "Under thread" will be displayed.

2-1-2. How to operate

![CAUTION]

When performing this operation, do not put your hands etc. near the needle. Moving up/down of the needle bar could injure you.

The following is an example that thread trimming is executed.

(1) To open screen

![Diagram of screen opening]

(2) To execute thread trimming

![Diagram of thread trimming operation]

Pressing SET key will move the needle bar up/down and trim thread.
2-2. To trim thread automatically (ATH)

It is the setting to trim thread.

2-2-1. Explanation on the screen

- **[a]** To trim thread automatically
  - YES: To trim
  - NO: Not to trim thread

- **[b]** Remaining length of upper thread after thread trimming (1 in the right figure)
  - Short: -8
  - Long: +8

  When upper thread remains on the fabric, select the value of "+".
  If sewing is impossible due to short of remaining length of upper thread, select the value of "-".
  When "N" is displayed, the value differs in each needle bar.
  Regarding the setting of needle bar unit, refer to the detailed page.(p.101)

- **[c]** Number of lowering the needle bar by slow operation at start after thread trimming or after data set
[d] The number of return stitches at start of sewing

0: Without Return Stitches
1: One reciprocation
2: Two reciprocations

T0: Triangle

T1: Triangle + one reciprocation

T2: Triangle + two reciprocations

[e] Stitch length of [d] described above
When "N" is displayed, the value differs in each needle bar (p.101).

[f] Tie stitching at thread trimming
A: Not to perform tie stitching

B: To perform tie stitching (once)

C: To perform tie stitching after lowering the needle twice on the same position at the end of the stitch

D: To perform tie stitching (twice)

[g] Stitch length of [f] described above
When "N" is displayed, the value differs in each needle bar (p.101)

[h] Coming-out amount of hook (thread holder) (2 in the right figure)
A on the screen is fixed. It is impossible to change.
To trim thread

2-2-2. How to operate

The following is an example that thread is trimmed automatically and picker timing is set to "+2" and the number of Inching after ATH is set to "3".

(1) To open screen

(2) To trim thread automatically

(3) To select thread trim length

When "N" is displayed, changing "N" to a value will set the detecting sensitivity in all needle bars to same.

(4) To select number of inching times at start after thread trimming
2-3. To change thread breakage detecting sensitivity (Thread Detection)

Use this function in the following cases.

(1) Thread breakage is detected even when thread is not broken.
(2) Thread breakage detection timing is late.

2-3-1. Explanation on the screen

**[a]** Setting how many consecutive times of detection of upper thread breakage are regarded as thread breakage

- 0: Not to stop even if upper thread is broken
- N: To stop if upper thread is broken (the detecting sensitivity differs in each needle bar) (p.101)
- 1, 2, 3, 4: To stop if upper thread is broken (Detecting sensitivity is same in all needle bar)

When selecting "3", the thread breakage will be detected after upper thread breaks three times continuously.

The relationship between the number of detecting times and sensitivity is shown as follows.

1 2 3 4

[Sensitivity]

**[b]** Setting how many consecutive times of detection of "under thread (ratio)" are regarded thread breakage to stop the machine

- 0: Not to stop even if under thread is broken
- N: To stop if under thread is broken (the detecting sensitivity differs in each needle bar) (p.101)
- 2, 4, 6, 8: To stop if under thread is broken (Detecting sensitivity is same in all needle bar)

When selecting "4", the thread breakage will be detected after upper thread breaks four times continuously.

The relationship between the number of detecting times and sensitivity is shown as follows.

2 4 6 8

[Sensitivity]
[c] Set sensitivity of [b]. Change this value according to the type of fabric and thread to use. It enables to prevent mis-detection.

N: To stop if under thread is broken (the detecting sensitivity differs in each needle bar) (p. 101)

30 to 100: To stop if under thread is broken (Detecting sensitivity is same in all needle bar)

The relationship between detecting ratio and sensitivity is shown as follows.

\[
\begin{array}{c}
30 \\
\text{Low}
\end{array} \quad \begin{array}{c}
100 \\
\text{High}
\end{array}
\]

[Sensitivity]

2-3-2. How to operate

The following is an example that the number of upper thread breakage detecting times is set to "2" and the number of under thread breakage detecting times (unit) is set to "6".

(1) To open screen

(2) To select number of upper thread breakage detecting times

When "N" is displayed, changing "N" to a value will set the detecting sensitivity in all needle bars to same.

(3) To select number of under thread breakage detecting times (unit)
2-4. To trim thread by the number of consecutive jump stitches (Jump Convert)

This is the setting how many consecutive stitches of jump code cause thread trimming and move the frame at next stitch.

2-4-1. Explanation on the screen

![Diagram of Jump Convert screen]

- Number of consecutive jump codes
  - NO: Not affected
  - 1 to 9: Number of consecutive jump codes

- How to move frame to next stitch
  - A: Batch
  - B: As data

2-4-2. How to operate

The following is an example that the number of consecutive jump code is set to "4".

1. To open screen

   ![Diagram of setting number 4]

2. To select number of consecutive jump codes
2-5. To add thread trimming code to the design and trim thread (Data Edit "Insert")

This function always executes automatic thread trimming at the same position by adding thread trimming code to the design. A stitch will be inserted before the selected stitch No. When this operation is performed in the middle of embroidery, data set will be canceled. If the stitch having long length is inserted, a design will be displaced hereafter.

2-5-1. Explanation on the screen

![Diagram of Data Edit screen]

- **X data (Data to move the frame in crosswise)**: When a value is 8, the frame travel amount is 0.8 mm.
- **Function code (p.219)**: It is the code to indicate the role of the stitch.
- **Y data (Data to move the frame in lengthwise)**: When a value is 4, the frame travel amount is 0.4 mm.

2-5-2. How to operate

**CAUTION**

⚠️ The original design will be overwritten after editing. Back up design data according to need.

The following is an example that thread trimming code is added to 20th stitch.

1. **To open screen**

2. **To select a design**
To trim thread

(3) To select stitch No. to perform thread trimming

(4) To select "Insert" and decide

(5) To select "Modify" to move the cursor

(6) To select "ATH"

(7) To decide
2-6. To change thread trim timing (ATH Start Timing)

This function applies to single head machine only. Its purpose is to improve thread trimming by changing moving timing of the thread trimming knife.

2-6-1. Explanation on the screen

Timing to start moving thread trimming knife (Value is of main shaft angle)

Start moving of the thread trimming knife

-10 Fast 10 Slow

4 ATH Drive Start Timing 0°

2-6-2. How to operate

The following is an example that ATH drive start timing is set to "5 °".

(1) To set to main screen
(2) To press F2 key while pressing SET
(3) To press F2 key
(4) To select ATH drive start timing
3. To set the embroidery speed

3-1. To limit embroidering speed by stitch length (Min. Revolution)

3-1-1. Explanation on the screen

1 Min. Revolution 600 rpm

Maximum speed at stitch of which stitch length is 12 mm or more

3-1-2. How to operate

The following is an example that Low Speed R.p.1M. is set to “550 rpm”.

(1) To open screen

F2

1 Min. Revolution 600 rpm

(2) To select Low speed R.p.1M.
3-2. To change maximum speed only in some section (Revolution Limit)

To make this function effective, it is necessary to add the following function codes or modify the stitch data (p.114).

<table>
<thead>
<tr>
<th>Function name</th>
<th>Function code</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low Speed Start Stitch</td>
<td>Low_S</td>
</tr>
<tr>
<td>Low Speed End Stitch</td>
<td>Low_E</td>
</tr>
</tbody>
</table>

3-2-1. Explanation on the screen

![Maximum speed of section surrounded by function codes Low_S to Low_E](image)

3-2-2. How to operate

The following is an example that the maximum speed of the section surrounded by the function codes Low_S to Low_E is set to "700".

(1) To open screen

![F2 button](image)

(2) Select maximum speed

![700](image)
3-3. To decide upper limit value of the maximum speed (Max. Revolution Limit)

3-3-1. Explanation on the screen

![Image of screen showing Max. Revolution Limit with upper limit value set to 1000 rpm]

3-3-2. How to operate

The following is an example that Max. Revolution Limit is set to "950".

(1) To set to main screen

(2) To press F2 key while pressing SET, and press SET further

(3) To cancel the password

Regarding canceling method, refer to the detail page (p.126).

(4) To select limit of max revolution
4. To stop the machine

4-1. To stop the machine automatically when reaching the set value (Preset Halt)

4-1-1. Explanation on the screen

[a] To stop at number of stitches (1 stitch unit)
[b] To stop by stitch length
[c] To stop by number of designs
[d] To stop at number of stitches (10000 stitch unit)
[e] To stop just before end of design
[f] To stop by beads quantity at left
[g] To stop by beads quantity at right

To stop the machine

[a] The machine will stop when counting reaches the number of set stitches (display of 1D2).
[b] The machine will stop when embroidery stitch length reaches the set length (display of 1D2).
[c] The machine will stop when the number of designs reaches the set numbers (display of 1D2).
[d] The machine will stop when counting reaches the number of set stitches (display of OIL).
   When automatic lubrication system is set to "YES", it will not be displayed.
[e] The machine will stop short of the end code by one stitch (display of 1D2).
   YES: To stop
   Since embroidery is not finished, it is possible to perform frame back.
   NO: Not to stop
[f] Quantity of beads attached to Lochrose embroidery device (option) at left
   When the equipped beads run out, the machine stops (display of 1D5).
   To disable this function, select "NO". This setting will be displayed when "Lochrose embroidery device" is set as "L" or "L + R" (p.182).
[g] Quantity of beads attached to Lochrose embroidery device (option) at right
   The contents are same as above.
4-1-2. How to operate

The following is an example that the halt by the number of stitches is set to "15000".

(1) To open screen

(2) To select value of halt by the number of stitches

4-2. To stop the machine before needle bar hits the frame (Software Frame Limit)

4-2-1. Explanation on the screen

Software Frame Limit
YES: To set / NO: Not to set

"Frame Type" selected now. It is impossible to change. Software Frame Limit is memorized in every frame type.

Frame coordinates of Point 1 (p.88)
Frame coordinates of Point 2 (p.88)
To stop the machine

Chapter 5

4-2-2. How to operate

**CAUTION**

⚠️ When performing this operation, do not put your hands etc. on the machine table. Moving frame could injure you.

The following is an example that the tubular frame is set as Software Frame Limit.

1. To open screen

2. To make software frame limit effective

3. To decide P1 (Point 1)

4. To decide P2 (Point 2)

When performing this operation, do not put your hands etc. on the machine table. Moving frame could injure you.
4-3. To stop the machine with needle bar stuck in the material (Stop at Lower D.Point)

This setting stop the machine with needle stuck in the material at the end of embroidery.

4-3-1. Explanation on the screen

![10 Stop at Lower D. point NO]

YES: To set
NO: Not to set (usual setting)

4-3-2. How to operate

The following is an example that Stop at Lower D. Point is set.

(1) To open screen

![10 Stop at Lower D. Point NO]

(2) To set Stop at Lower D. Point

![YES SET]
4-4. To stop at Frame Limit (Frame Limit setting)

This is the setting to stop the frame at Frame Limit (movable limit position). To stop at Frame Limit, it is necessary to be memorized the frame origin correctly by the machine. The position where the frame stops differs in every "Frame Type". This function is applicable for single-head machine only.

4-4-1. Explanation on the screen

[a] Stop at Frame Limit
YES: To stop (usual setting)
NO: Not to stop

Selecting "NO" will not display the following message at data input.

6 Frame Limit Setting NO

4-4-2. How to operate

The following is an example that the frame is stopped at Frame Limit.

(1) To set to main screen

(2) To press F1 key while pressing SET

SET + F1 screen will be displayed.

(3) To press F1 key

6 Frame Limit Setting NO

CAUTION

! Selecting "NO" will not stop the frame at frame limit. The frame could interfere with the peripheral part resulting in its breakage.
To stop the machine

(4) To make Frame Limit Setting effective

[Diagram showing a symbol, an arrow to 'YES', and a 'SET' symbol]
5. To change the direction and the size of the design

5-1. To perform enlargement, rotation, reversion (Data Conversion)

Set this function after data set. Setting contents here will be added in a design. So, when you embroider this design next time, setting again will be unnecessary.

5-1-1. Explanation on the screen

The illustration shows an example of the same scale ratio in X/Y.

[a] Crosswise (X) scale ratio (%)

[b] Lengthwise (Y) scale ratio (%)

[c] Rotating angle (°)

[d] Reversion
5-1-2. How to operate

The following is an example that crosswise scale ratio and lengthwise scale ratio are set to "120".

(1) To open screen

(2) To select crosswise scale ratio

(3) To select lengthwise scale ratio
6. To embroider the same design repeatedly

6-1. To repeat to crosswise and lengthwise direction (Repeat)

Set this function after data set. Setting contents here will be added in a design. So, when you embroider this design next time, setting again will be unnecessary.

6-1-1. Explanation on the screen

[a] Repeat pattern

The illustration below is an example that the priority embroidery direction is lengthwise.

[b] Number of repeats in crosswise

c] Interval in crosswise (mm)

d] Number of repeats in lengthwise

e] Design interval

[f] Priority embroidering direction

[g] Thread trimming (Display only)

Repeat direction will be decided by code. Selecting "-" will perform embroidering at left repeatedly.

(No display)
6-1-2. How to operate

The following is an example that repeat pattern "pb", the number of repeats in crosswise "3", interval in crosswise "60", the number of repeats in lengthwise "2", interval in lengthwise "50", priority direction "X" are set.

(1) To open screen

(2) To select repeat pattern

(3) To select number of repeats in crosswise
To embroider the same design repeatedly

(4) To select interval in crosswise (mm)

The frame will move.

(5) To select number of repeats in lengthwise

(6) To select interval in lengthwise (mm)

The frame will move.

(7) To select priority embroidering direction

After that, switching the screen will return the frame to the original position.

To cancel the setting of repeat, set "the number of repeats in crosswise" and "the number of repeats in lengthwise" to "1".
6-2. To repeat at the same place (A.S. after Auto Data Set)

This setting makes the machine start automatically after finishing embroidery and embroider the same design repeatedly.
This function is effective only when "Auto Start (AS)" is set to "YES" (p.53).

6-2-1. Explanation on the screen

![Diagram]

6 Automatic Start after Automatic Data Set NO

YES: To set
NO: Not to set (usual setting)

6-2-2. How to operate

![Diagram]

CAUTION

After embroidery is finished, do not put your hands etc. on the table. Automatic start operation could injure you.

The following is an example that Automatic Start after Automatic Data Set is set.

(1) To open screen

(2) To set automatic start after automatic data set
7. To adjust finishing of sewing

7-1. To adjust driving error of the frame (Backlash)

Correct driving error of the frame generated when a stitch turns back.

7-1-1. Explanation on the screen

[Image of the screen showing Backlash with X and Y values corrected by 0.5 mm in both crosswise and lengthwise directions.]

[Example of combination of X/Y correcting value]

The left illustration shows an example that the values are X:0.5 and Y:0.5.
To adjust finishing of sewing

Chapter 5

7-1-2. Explanation for operation

The following is an example that correcting value of crosswise direction is set to "0.3".

(1) To open screen

F1 \[ \rightarrow 4 \text{ Backlash} \rightarrow \text{SET} \]

(2) To select correcting value in crosswise

\[ \rightarrow 0.3 \rightarrow \text{SET} \]

7-2. To adjust stitch length of satin stitch (Satin Stitch)

7-2-1. Explanation on the screen

[a] Applicable range

[b] Adding amount

[a] Whole: All satin stitches in the design are targets.

Part:

Satin stitches of the section surrounded by satin stitch codes (Satin_S to Satin_E) are targets.

[b] 1/2 of the value will be added to both sides of stitch length.

Example of the value in +0.4 mm

\[ \begin{array}{c}
0.2 \\
0.2 \\
\vdots \\
\text{Before enlargement} \\
\text{After enlargement}
\end{array} \]
7-2-2. How to operate

The following is an example that applicable range is set to "part" and adding amount is set to "+0.4".

(1) To open screen

(2) To select applicable range

(3) To select adding amount

7-3. To divide a long stitch (Auto Jump)

This function makes the frame movement to divide by jump automatically when a stitch length exceeds a setting value. This function reduces the load generated at the frame drive due to heavy weight of the material to be embroidered. However, dividing by jump will reduce embroidering efficiency.

7-3-1. Explanation on the screen

Setting for auto jump

NO: Not to perform

2.0 to 9.9:

The machine will jump automatically when a stitch exceeding a set value is given. When a value is 4.0, the machine will jump automatically if stitches of 4.1 mm and more are given. If frame type is set to "Auto Clamp Frame", setting range is 2.0 to 5.0 mm.

Timing to start moving the frame (p.105)

R.p.1M. at auto jump

Yes: To keep (remaining in high speed)

NO: Not to keep (speed reduction according to a stitch length)
7-3-2. Explanation for operation

The following is an example that stitch length to jump automatically is set to "6.0".

(1) To open screen

![Diagram]

(2) To select stitch length to perform automatic jump

![Diagram]

7-4. To change stitching condition in every needle bar (Setting in units of Needle bar)

7-4-1. Explanation on the screen

![Screen Screenshot]

- [a] Needle bar No.
- [b] Maximum speed
- [c] Number of upper thread breakage detecting times
- [d] Number of under thread breakage detecting times
- [e] Sensitivity of [d] described above
- [f] Remaining length of upper thread
- [g] Return Stitch Length
- [h] Tie Stitch Length
To adjust finishing of sewing

[a] Needle bar No. applied to sewing condition
Perform the following setting for this needle bar.

[b] Maximum speed

[c] Setting how many consecutive times of detection of upper thread breakage are regarded as thread breakage
0: Not to stop even if upper thread is broken
1, 2, 3, 4: To stop if upper thread is broken
   When selecting "3", the thread breakage will be detected after upper thread breaks three times continuously.
   The relationship between the number of detecting times and sensitivity is shown as follows.
   1 2 3 4
   High ← 3 2 4 Low
[Sensitivity]

[d] Setting how many consecutive times of detection of "under thread (ratio)" of [e] are regarded thread breakage to stop the machine
0: Not to stop even if under thread is broken
2, 4, 6, 8: To stop if under thread is broken
   When selecting "4", the thread breakage will be detected after upper thread breaks four times continuously.
   The relationship between the number of detecting times and sensitivity is shown as follows.
   2 4 6 8
   High ← 4 6 2 Low
[Sensitivity]

[e] Set sensitivity of [d]. Change this value according to the type of fabric and thread to use. This enables to prevent mis-detection.
30 to 100: To stop if under thread is broken
   The relationship between detecting ratio and sensitivity is shown as follows.
   30 100
   Low ← 30 100 High
[Sensitivity]

[f] Length of remaining upper thread at thread trimming (1 in the right figure)
-8 ← 0 +8
Short Long
   When upper thread remains on the fabric, select the value of "-".
   If sewing is impossible due to short of remaining length of upper thread, select the value of "+".

[g] Stitch length of return stitch after start of sewing

[h] Tie stitch length at thread trimming
7-4-2. How to operate

The following is an example that the needle bar No. is set to "3", the maximum speed is set to "950", and upper thread breakage detecting sensitivity is set to "3".

(1) To set to main screen

(2) To press F1 key while pressing SET

SET  F1  SET + F1 screen will be displayed.

(3) To press F1 key

F1

3 Setting in Units of Needle bar

(4) To select needle bar No.

3

(5) Select maximum speed

950

(6) To select number of upper thread breakage detecting times

3
7-5. To delete a fine stitch (Cleanup)

This function removes a fine stitch that causes thread breakage and makes a fine stitch to be absorbed by the next stitch. This function has an effect to decrease thread breakages.

7-5-1. Explanation on the screen

7-5-2. How to operate

**CAUTION**

The original design will be overwritten after removing fine stitches. Back up design data according to need.

The following is an example that the stitch length to remove is set to "0.5".

(1) To open screen

(2) To select a design
(3) To select stitch length to remove

(4) To execute

7-6. To change thread tension (Frame start timing)

7-6-1. Explanation on the screen

7-6-2. How to operate

⚠️ CAUTION

To change this value, consult the distributor. Some operating condition could cause occurrence of fault in thread trimming and affect sewing.

The following is an example that Frame Drive Start Timing is set to "270".

(1) To set to main screen

(2) To press F2 key while pressing SET
(3) To press F2 key

![F2 button]

2 Frame Drive Start Timing 280°

(4) To select Frame Drive Start Timing

![Set button]

270°

7-7. To make a remaining upper thread inconspicuous (Upper thread lock timing)

This function corresponds to the multi-head machine only.

7-7-1. Explanation on the screen

![Upper thread lock timing screen]

[a] Remaining length of upper thread after start of sewing

[b] Remaining length of upper thread after thread trimming

[a] Timing to open upper thread lock

Perform adjustment when upper thread remains on the fabric after start of sewing. When upper thread is still highly visible at A, set B or C.

A Upper thread is easy to remain, and easy to fray
B
C Upper thread is hard to remain, and hard to fray

[b] Timing to close upper thread lock

Perform adjustment when upper thread remains on the fabric after thread trimming. When upper thread is still highly visible, set to B or C.
To adjust finishing of sewing

Chapter 5

7-7-2. How to operate

The following is an example that remaining length of upper thread is set to "B" after start sewing.

(1) To open screen

F2

10 Upper Thread Lock Timing

SET

(2) To select remaining length of upper thread after start of sewing

SET

7-8. To adjust stitching length according to a stitch length (Frame drive adjustment)

This function corresponds to the multi-head machine only.

7-8-1. Explanation on the screen

[a] "Frame Type" selected now (p.141).

The following values can be memorized at every "Frame Type".

[b] To adjust stitch in crosswise direction of around 4 mm finely

c] Stitch in crosswise direction of around 12 mm

d] Stitch in lengthwise direction of around 4 mm

e] Stitch in lengthwise direction of around 12 mm

Stitch length tends to be increased in [-] value and decreased in [+] value in general due to characteristic of the machine. However, this aptitude may not be applicable depending on setting condition of other items and/or machine condition.

-3  0  +3
Increase  Decrease
7-8-2. How to operate

The following is an example that the stitch in crosswise direction of around 4 mm is set to "+1".

(1) To set to main screen
(2) To press F2 key while pressing SET

SET + F2 screen will be displayed.

(3) To press F2 key

(4) To select stitch in crosswise direction of around 4 mm
To increase embroidering efficiency

8. To increase embroidering efficiency

8-1. To change number of lowering needle bar at slow operation (Number of inching times at start)

This function targets slow operation when the machine stops in the middle of embroidery and then the machine restarts. Regarding the number of lowering the needle bar by slow operation at start after thread trimming or after data set, refer to the detail page. (p.74)

8-1-1. Explanation on the screen

8-1-2. Explanation for operation

The following is an example that the number of Start Inching is set to "3".

(1) To open screen

(2) To select number of lowering needle bar at slow operation

8-2. To collect up frame moving amount of consecutive jump stitches in a batch to feed the frame all at once (Jump code combination)

This function corresponds to the multi-head machine only. It reduces the number of stitches by combining frame moving amount of consecutive jump stitches (up to 5 stitches) and by feeding the frame all at once.

8-2-1. Explanation on the screen
8-2-2. How to operate

The following is an example that Jump Code Combination is set.

(1) To open screen

```
F1  5 Jump Code Combination NO
```

(2) To set Jump Code Combination

```
YES  SET
```

8-3. To change moving speed of needle bar case (Color change speed)

This function applies to single head machine only. When sequin device III is equipped, the machine does not have this function.

8-3-1. Explanation on the screen

```
2 Color Change Speed Low
```

High: High speed (usual setting)
Low: Low speed

8-3-2. How to operate

The following is an example that Color Change Speed is set to "High".

(1) Press the F5 key within 10 seconds after turning ON the power, and keep on pressing the key. If the version of the software is displayed, release the key.

(2) To select color change speed

```
High  SET
```
8-4. To change travel speed of the frame (Frame Travel Speed)

This function targets at origin return of the frame and/or offset travel.

8-4-1. Explanation on the screen

The following is an example that Frame Travel Speed is set to 100 mm/sec:

(1) To open screen

(2) To select Frame Travel speed

8-4-2. Explanation for operation

The following is an example that Frame Travel Speed is set to 100 mm/sec:

(1) To open screen

(2) To select Frame Travel speed
8-5. To set data of the design automatically after embroidery is finished
(Automatic Data Set after finishing embroidery)

This function corresponds to single head machine only.

8-5-1. Explanation on the screen

[a] Perform Automatic Data Set of the design embroidered after finishing embroidery.
   YES: To perform
   NO: Not to perform

[b] Delete the design automatically after finishing embroidery.
   YES: To perform
   NO: Not to perform

8-5-2. Explanation for operation

The following is the example of “Not to perform Automatic Data Set of the design” and “Delete the design automatically” after finishing embroidery.

(1) Set to the main screen.

(2) Press A key while pressing SET key.

(3) Press A key.

SET + A screens will be displayed.
Chapter 5

To increase embroidering efficiency

(4) Select NO (Not to perform Automatic Data Set of the design).

(5) Select YES (Delete the design automatically).
9. To edit design

9-1. To modify the stitch (Data Edit "Modify")

When this operation is performed in the middle of embroidery, data set will be canceled. If stitch length after change is different from that before change, a design will be displaced hereafter.

9-1-1. Explanation on the screen

The following is an example that 20th stitch is changed to non-data (X: 0.0, Y:0.0) jump code.

(1) To open screen

(2) To select a design

The original design will be overwritten after editing. Back up design data according to need.

9-1-2. How to operate

**CAUTION**

The original design will be overwritten after editing. Back up design data according to need.

The following is an example that 20th stitch is changed to non-data (X: 0.0, Y:0.0) jump code.

(1) To open screen

(2) To select a design

**CAUTION**

The original design will be overwritten after editing. Back up design data according to need.

The following is an example that 20th stitch is changed to non-data (X: 0.0, Y:0.0) jump code.

(1) To open screen

(2) To select a design

**CAUTION**

The original design will be overwritten after editing. Back up design data according to need.

The following is an example that 20th stitch is changed to non-data (X: 0.0, Y:0.0) jump code.

(1) To open screen

(2) To select a design

**CAUTION**

The original design will be overwritten after editing. Back up design data according to need.

The following is an example that 20th stitch is changed to non-data (X: 0.0, Y:0.0) jump code.

(1) To open screen

(2) To select a design

**CAUTION**

The original design will be overwritten after editing. Back up design data according to need.

The following is an example that 20th stitch is changed to non-data (X: 0.0, Y:0.0) jump code.

(1) To open screen

(2) To select a design

**CAUTION**

The original design will be overwritten after editing. Back up design data according to need.

The following is an example that 20th stitch is changed to non-data (X: 0.0, Y:0.0) jump code.

(1) To open screen

(2) To select a design
After that, select the stitch No. to change. There are following two types of selecting patterns.

(a) To select stitch No. by using search function, refer to the detail page. (p.116)

(b) To select the stitch No. by the jog dial/jog shuttle, follow the explanation below.

[To select stitch No. by the jog dial/jog shuttle]

(3) To select stitch No. to change

(4) To select "Modify"

(5) To edit X data

(6) To edit Y data

(7) To modify the function code
(8) Decide the modification.

[To select stitch No. by using search function]

(3) To make search function effective

(4) To search stitch by function code

(5) To complete to search and select "Modify"

(6) To edit X data
(7) To edit Y data

(8) To modify the function code

(9) Decide the modification.

9-2. To modify the stitch (Data Edit "Insert")

When this operation is performed in the middle of embroidery, data set will be canceled. If the stitch having long length is inserted, a design will be displaced hereafter.

9-2-1. Explanation on the screen

X data (Data to move the frame in crosswise)
When a value is 8, the frame travel amount is 0.8 mm.

Y data (Data to move the frame in lengthwise)
When a value is 4, the frame travel amount is 0.4 mm.

Function code (p.219)
It is the code to indicate the role of the stitch.
9-2-2. How to operate

The following is an example that non-data (X: 0.0, Y:0.0) jump code is added to 120th stitch.

(1) To open screen

(2) To select a design

After that, select the stitch No. to insert. There are following two types of selecting patterns.

(a) To select stitch No. by using search function, refer to the detail page (p.120).

(b) To select the stitch No. by the jog dial/jog shuttle, follow the explanation below.

[To select stitch No. by the jog dial/jog shuttle]

(3) To select stitch No. to insert

(4) To select "Insert"

The original design will be overwritten after editing. Back up design data according to need.
To edit design

**Chapter 5**

(5) To execute insertion

Are you ready? \(\Rightarrow\) SET

(6) To select "Modify" to move the cursor

\(\Rightarrow\) Modify

(7) To select "Jump".

\(\Rightarrow\) Jump

(8) To decide insertion

\(E\) \(\Rightarrow\) E \(\Rightarrow\) Are you ready? \(\Rightarrow\) SET
[To select stitch No. by using search function]

(3) To make search function effective

SET

⇒ Stitch

(4) To search stitch by function code

SET

⇒ Color

Pressing SET key will search the stitch of "Color" by function code. Pressing SET key further will search the next stitch.

When there is no selected function code, display will not change.

(5) To complete to search and select "Insert"

E

⇒ : ⇒ Insert ⇒ SET

(6) To execute insertion

Are you ready?

⇒ SET

(7) To select "Modify" to move the cursor

⇒ Modify ⇒ SET ⇒ SET ⇒ SET
To edit design

(8) To select "Jump".

![Diagram of jump function]

(9) To decide insertion

![Diagram of insertion decision]

9-3. To delete the stitch (Data Edit "Delete")

When this operation is performed in the middle of embroidery, data set will be canceled. If the stitch having long length is deleted, a design will be displaced hereafter.

9-3-1. Explanation on the screen

<table>
<thead>
<tr>
<th>Stitch No.</th>
<th>X data (Data to move the frame in crosswise)</th>
<th>Y data (Data to move the frame in lengthwise)</th>
<th>Function code (p.219)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Jump</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td></td>
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<td></td>
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<tr>
<td>5</td>
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<td>6</td>
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<td>7</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

When a value is 8, the frame travel amount is 0.8 mm.

When a value is 4, the frame travel amount is 0.4 mm.
9-3-2. How to operate

**CAUTION**

⚠️ The original design will be overwritten after editing. Back up design data according to need.

The following is an example that 20th stitch is deleted.

**1.** To open screen

**2.** To select a design

After that, select the stitch No. to delete. There are following two types of selecting patterns.

(a) To select stitch No. by using search function, refer to the detail page (p.123).

(b) To select the stitch No. by the jog dial/jog shuttle, follow the explanation below.

[To select stitch No. by the jog dial/jog shuttle]

**3.** To select stitch No. to delete

**4.** To select "Delete"

The original design will be overwritten after editing. Back up design data according to need.
(5) To decide deletion

![Diagram](image)

Are you ready?

SET

[To select stitch No. by using search function]

(3) To make search function effective

![Diagram](image)

SET

Stitch

(4) To search stitch by function code

![Diagram](image)

Pressing SET key will search the stitch of "Color" by function code. Pressing SET key further will search the next stitch.

When there is no selected function code, display will not change.

(5) To select "Delete"

![Diagram](image)

(6) To decide deletion

Are you ready?

SET

Are you ready?
10. Setting and resetting of password

The password is set to "0000" at shipment.

10-1. To change password (Functional limit of password)

When you forget the password, install the software. The password will return to "0000". Regarding software installation, refer to the separate "System Handling Manual".

10-1-1. Explanation on the screen

10-1-2. How to operate

The following is an example that the password is changed from "0000" to "ZY98".

(1) To set to main screen

(2) To press F1 key while pressing SET
(3) To input current password

(a) To input "0"

(b) To input remaining password "0", "0", "0" in the same procedure.

(c) To decide

(4) To input password after change

(a) To input "Z"

(b) To input "Y"

(c) To input remaining password "9", "8" in the same procedure.

(d) To decide
(5) To input password again after change
   (a) To input password in the same procedure
   (b) To decide

10-2. To cancel the password

The password is set for some function. Perform operation in the following procedure after canceling the password.

10-2-1. Explanation on the screen

10-2-2. How to operate

The following is an example that the password "0000" is cancelled.

(1) To input password "0"

(2) To input remaining password "0", "0", "0" in the same procedure.

(3) To decide
Chapter 5

11. Other functions that must be remembered

11-1. To check the number of total stitches up to now (Total Stitch Counter)

11-1-1. Explanation on the screen

The number of total stitches embroidered up to now. When resetting the value, select "0" and press SET key.

Time elapsed from start after data set to the present (The screen shows an example of 50 minutes and 8 seconds)

Counting continues even during sleep mode and turning OFF the power. Embroidery time will be reset in the following conditions.

(1) When the current embroidery is finished and the machine starts next
(2) When data is set

11-1-2. How to operate

The following is an example that the total stitch counter is checked.

(1) To open screen

Since C screen will be displayed, check the total stitch counter.
11-2. To color in every needle bar (Needle Bar Color)

11-2-1. Explanation on the screen

The following is an example that the needle bar No. 1 set to "red".

(1) To open screen

(2) To select needle bar No.

(3) To select color

(4) To decide

Are you ready?
Other functions that must be remembered

Chapter 5

11-3. To display the setting color when making the design (Needle bar information)

11-3-1. Explanation on the screen

**10 Needle bar information**  
**NO**

**YES:**  
Display the setting color when making the design.

When the information about the setting color is not included in the design data, the setting of “B-10 needle bar color” will be effective.

**NO:**  
Display the color being set in “B-10 needle bar color” (p. 128)

11-3-2. How to operate

The following is the example of displaying the setting color when making the design.

(1) Set to the main screen.

(2) Press B key while pressing SET key.

(3) Press B key.

(4) Select YES.
11-4. To check version of current software (Software Version)

11-4-1. Explanation on the screen

The following is an example that the software version is checked.

(1) To set to main screen

(2) To press F4 key while pressing SET

11-5. To switch display language (Language)

11-5-1. Explanation on the screen
Other functions that must be remembered

11-5-2. Explanation for operation

The following is an example that the language is changed to "English".

(1) To set to main screen

(2) To press F4 key while pressing SET

SET  F4

SET + F4 screen will be displayed.

(3) To press F4 key

F4

10 Language  Spanish

(4) To select language

English  SET
11-6. To release fixing of main shaft motor (weak brake)

It is the setting to release the fixing of the main shaft motor temporarily while the main shaft stops. This function is used for the maintenance of the machine mainly.

11-6-1. Explanation on the screen

[a] Fixing of main shaft motor

YES: To fix the main shaft motor while the main shaft stops (usual setting)
NO: Not to fix the main shaft motor while the main shaft stops

Even if "NO" is selected, it will be switched to "YES" after starting the machine.
Always NO: Not to fix the main shaft motor always while the main shaft stops

"Always NO" will be displayed in single head machine only.

[b] Current main shaft angle

When you desire to check the main shaft angle, set the value of above [a] to "NO" or "Always NO", and then turn the main shaft.

When left code is displayed, follow the procedure below.

1. Set the value of [a] to "NO".
2. Turn the main shaft slowly until the lamp in the figure below (indicated by an arrow) starts blinking.
3. After the screen is switched (press E key) and the original screen is returned, "100" (fixed position) will be displayed.
11-6-2. How to operate

The following is an example that the main shaft motor is set to "not to fix".

(1) To set to main screen

(2) To press F3 key while pressing SET

SET F3

SET + F3 screen will be displayed.

(3) To press F3 key

F3

2 Weak Brake

(4) To select “Not to fix”

NO

SET
Other functions that must be remembered
Chapter 6
Functions concerning frame movement

1. To return the frame (Frame Back) / to advance the frame (Frame Forward) ... 136
2. Necessary works after replacing the frame .......................................................... 141
3. To return the frame to the original position ......................................................... 145
4. To return the frame to the design start position .............................................. 151
5. To move the frame to the position registered ................................................... 153
1. To return the frame (Frame Back) / to advance the frame (Frame Forward)

1-1. To switch frame back / frame forward

1-1-1. Explanation on the screen

1-1-2. How to operate

The following is an example of setting frame forward.

(1) To open screen

(2) To select FF (Frame Forward)
To return the frame (Frame Back) / to advance the frame (Frame Forward)

**1-2.** To execute by color change unit, to specify number of stitches to execute

**1-2-1.** Explanation on the screen

![Image of a screen with options for Frame Back/Frame Forward]

- **[a]** To execute in color change unit
  - 「: Not to execute
  - 「: To execute

- **[b]** To perform by specifying the number of stitches
  - NO: Not to perform
  - 1 to end stitch:
    - To perform (to perform frame back or frame forward by the number of stitches)

**1-2-2.** How to operate

**CAUTION**

⚠️ When performing this operation, do not put your hands etc. on the machine table. Moving frame could injure you.

The following is an example of executing frame forward by color change unit.

1. **(1) To open screen**

2. **(2) To select FF (Frame Forward)**
To return the frame (Frame Back) / to advance the frame (Frame Forward)

Chapter 6

1-2-3. How to operate

**CAUTION**

When performing this operation, do not put your hands etc. on the machine table. Moving frame could injure you.

The following is an example of specifying the number of stitches and executing frame forward.

1. To open screen

2. To select FF (Frame Forward)

3. To move the cursor to "Specification by the number of stitches"

4. To input the number of stitches and execute

Pressing SET key will move the frame.
1-3. To change a frame feed amount of frame back / frame forward

This function sets a frame feed amount when 11-stitches or more is successive due to the operation of frame back/frame forward by the stop switch or the bar switch.

1-3-1. Explanation on the screen

1-3-2. How to operate

The following is an example of setting the frame feed amount to "5".

(1) To open screen

(2) To move the cursor to "FB/FF feed unit"

(3) To select frame feed amount

1: Feed the frame by 1-stitch unit.
3: Feed the frame by 3-stitches unit.
5: Feed the frame by 5 stitches unit.
1-4. To set All Head Sewing Start Point (Frame Back All Head Sew)

This function applies to the multi-head machine only. This setting sets "All Head Sewing Start Point After Frame Back" and "Whether the machine stops at the position just before All Head Sewing Start Point or not".

1-4-1. Explanation on the screen

The machine stops at the position just before All Head Sewing Start Point.

YES: To stop
NO: Not to stop

1-4-2. How to operate

The following is an example of setting All Head Sewing Start Point to "3" and setting to "Stop" at the position just before All Head Sewing Start Point.

(1) To open screen

(2) To select All Head Sewing Start Point

(3) The machine stops at the position just before All Head Sewing Start Point.
2. Necessary works after replacing the frame

2-1. To change drive mode according to the frame that is equipped (Frame Type)

2-1-1. Explanation on the screen

Select the frame in the figure below.

In case of pocket frame, select "Cap".

The following frame types will be displayed in the single-head machine only.

A. Clamp T  A. Clamp B  X-EXT

Single-head machine only
2-1-2. How to operate

The following is an example of setting the frame type to "Cap".

(1) To open screen

(2) To select the frame

(3) To execute Frame Origin Memory (The below message will not be displayed for the multi-head machine.)

The following message will be displayed only when "Frame origin memory with the power ON" is set to "YES".(p.149)
To set frame type to “Auto Clamp” for single-head machine, follow the procedure below.

**CAUTION**

To execute “Frame Origin Memory”, follow the procedure below. The frame could hit the machine depending on the frame position and it might cause the damage of the parts.

---

**Frame origin memory is executed.**

“YES” >> SET

- **SET**
  - If the SET key is pressed, the frame will move. Press STOP switch immediately after moving the frame.
  - Code No.5C1 will appear.

- **STOP**
  - Press STOP switch immediately after moving the frame.
  - Code No.5C1 will appear.

- **E**
  - Press E key.

Move the frame to the upper right position from the center of embroidery space by manual frame travel.

- **Perform operation of “Frame Origin Memory”. (SET+F2)***

---

Upper right position

Center of the embroidery space
2-2. To rotate the design by 180° when a cap frame is equipped
(Design rotation by 180° on Cap Frame)

This function can be set only when "Frame type" is set to "Cap". (p.141)
It is unnecessary to rotate the design to set data conversion.

2-2-1. Explanation on the screen

2-2-2. How to operate

The following is an example of setting of design rotation by 180° to "To perform".

(1) To set to main screen

(2) To press B key while pressing SET

(3) To make the design rotation by 180° on Cap Frame effective
To return the frame to the original position

3. To return the frame to the original position

3-1. To return the frame that was moved to the original position (Manual Offset)

This function is effective only when the frame is moved manually after stopping the machine in the middle of embroidery.

3-1-1. Explanation on the screen

![5 Manual Offset](image)

To return the frame to the original position

- O: To execute
- : Not to execute

3-1-2. How to operate

![CAUTION](image)

When performing this operation, do not put your hands etc. on the machine table. Moving frame could injure you.

The following is an example of executing manual offset.

(1) To open screen

![D1](image)

5 Manual Offset

(2) To perform manual offset

![SET](image)

Pressing SET will move the frame.
3-2. To return moved frame to original position and start operation
(Frame return movement after manual frame travel)

This function is effective only when the frame is moved manually after stopping the machine in the middle of embroidery.

3-2-1. Explanation on the screen

- **6 Return the frame after manual frame travel**
  - **NO**
  - **Frame movement**

  **[a]** Setting to return/not to return the frame by operating the bar switch or the start switch
  - **YES**: The frame will return to the original position and the machine will start operation.
  - **NO**: The frame will not return. The operation will start from the position after frame travel.

3-2-2. How to operate

The following is an example of returning the frame to the original position and starting the operation.

1. To set to main screen
2. To press F2 key while pressing SET

   ![SET + F2 screen will be displayed.](image)

3. To press F2 key

   ![F2](image)

4. To return the frame by operating the bar switch or the start switch, and start working.

   ![YES](image)
3-3. To prevent displacement of design when the power is shut off during operation (Power resume)

This function works on condition that the frame origin is memorized correctly. If it is wrong, the frame will not return to the correct position.

3-3-1. Explanation on the screen

3-3-2. How to operate

The following is an example of executing Power resume.

(1) To set to main screen

(2) To press F2 key while pressing SET

(3) To press F2 key

CAUTION

When performing this operation, do not put your hands etc. near the needle or on the machine table. Moving needle bar or frame could injure you.
(4) To execute after thread trimming

3-4. To memorize frame origin (Frame origin memory)

Frame origin is an anchoring point (X:0.0, Y:0.0) to calculate the current frame position. Position of frame origin differs depending on model.

Perform this function in case of the following condition.

(1) There is a possibility that the frame was moved by hand in the state of power OFF or during sleep mode in such a case as changing frame.

(2) After installation of software

(3) When frame driver is changed

When a frame origin is wrong, the following troubles will occur.

- Frame coordinates are not displayed correctly.
- The frame does not return to the interrupted position even after performing power restoration.
- Position of frame limit gets out of alignment (only for single-head machine)

3-4-1. Explanation on the screen
3-4-2. How to operate

![CAUTION]

> When performing this operation, do not put your hands etc. on the machine table. Moving frame could injure you.

The following is an example of executing Frame origin memory.

(1) To set to main screen

(2) To press F2 key while pressing SET

![SET + F2 screen will be displayed.]

(3) To press F2 key

![9 Frame Origin Memory]

(4) To execute Frame origin memory

Pressing SET will move the frame.

3-5. To perform Frame origin memory when the power is turned ON

(Frame origin memory with the power-ON)

This is the setting to display the message and execute Frame origin memory in the following conditions. This function applies to the single-head machine only.

(1) When the power is turned ON

(2) When releasing sleep mode

(3) When "Frame type" is changed

When the embroidery is on the way or the main shaft is out of the fixed position, the message will not be displayed.

Frame origin memory is executed.

"YES" >> SET
3-5-1. Explanation on the screen

Display of the message to urge Frame Origin Memory
YES: To display
NO: Not to display

3-5-2. How to operate

The following is an example of displaying the message to urge frame origin memory when the power is turned ON.

(1) To set to main screen

(2) To press F1 key while pressing SET

\[
\text{SET} \quad \rightarrow \quad \text{F1} \quad \rightarrow \quad \text{SET + F1 screen will be displayed.}
\]

(3) To press F1 key

\[
\text{F1} \quad \rightarrow \quad \text{7 Frame origin memory --ON} \quad \rightarrow \quad \text{SET}
\]

(4) To display the message

\[
\text{SET} \quad \rightarrow \quad \text{YES} \quad \rightarrow \quad \text{SET}
\]
4. To return the frame to the design start position

4-1. To return the frame to the design start position manually

(Return to the design start position)

This function makes the frame return to the design start position in the middle of embroidery when you stopped the machine.

4-1-1. Explanation on the screen

4 Return to the design start position

— To return the frame to the design start position

— : Not to execute

○ : To execute

4-1-2. How to operate

CAUTION

⚠️ When performing this operation, do not put your hands etc. on the machine table. Moving frame could injure you.

The following is an example of executing design start position return.

(1) To open screen

D1

4 Return to the design start position

(2) To execute design start position return

Pressing SET will move the frame. To return to the original position, perform "Manual Offset". (p.145)
4-2. To return the frame to the design start position automatically (Auto Origin Return)

This is the setting to return the frame to the design start position automatically after embroidery is finished. When automatic offset is set, the frame will return to an offset start position. (p.153)

4-2-1. Explanation on the screen

4 Automatic Origin Return NO

Auto Origin Return
YES: To set
NO: Not to set

4-2-2. How to operate

CAUTION

After embroidery is finished, do not put your hands etc. on the table. Moving frame could injure you.

The following is an example of setting Automatic origin return.

(1) To open screen

F2

4 Automatic Origin Return NO

(2) To make Auto origin return effective

YES SET
5. To move the frame to the position registered

5-1. To move the frame automatically at the start
    and the end of embroidery (Automatic Offset)

This is the setting to move the frame automatically so that replacement of the frame and the fabric to be
stretched can be performed easily. Perform this setting after data set. Setting contents here will be added in
a design. So, when you embroider this design next time, setting again will be unnecessary.

The following is an example of movement when the setting of "Automatic Thread Trimming" is "YES".

(1) At the start of embroidery, the frame will pass from the offset start position [A] through the offset middle
    position [B] and move to the design start position [C], then the embroidery will start.

(2) When embroidery is finished, the frame will pass from the design end point [D] through the offset middle
    position [B] and return to the offset start position [A].

5-1-1. Explanation on the screen

[a] Offset middle position [B]

The position where the frame will pass. This position is optionally set. Set it when embroidered
material hits the machine during the frame travel.

[b] Offset start position [A]

The position where the frame has come to the front. Changing the frame and the fabric to be
stretched will be performed here.
To move the frame to the position registered

5-1-2. How to operate

![CAUTION]

When performing this operation, do not put your hands etc. on the machine table. Moving frame could injure you.

At the start and the end of embroidery, do not put your hands etc. on the table. Moving frame could injure you.

The following is an example of executing Automatic offset.

(1) To decide design to embroider (to perform data set)

(2) To move the frame to the design start position [C]

(3) To open screen

![B 5 Automatic Offset SET]

The current frame position will be memorized as design start position [C] when SET key is pressed.

(4) To decide OF1 (Offset Middle Position [B])

![-60 150 SET]

The frame will move.

(5) To decide OF2 (Offset Start position [A])

![-20 300 SET]

The frame will move.

To cancel the setting for automatic offset, set the values of OF1 and OP2 described above to "0".
5-2. To move the frame automatically at the start, in the middle and the end of embroidery

This function is the setting to move the frame automatically so that replacement of the frame, works for applique and change of fabric to be stretched can be performed easily.

The following is an example of movement when the settings of "Auto Color Change (AC)" and "Automatic Thread Trimming" are "YES".

1. At the start of embroidery, the frame will pass from the offset start position [A] through the offset middle position [B] and move to the design start position [C] by the operation of the bar switch or the start switch (described as switch operation hereinafter), then the embroidery will start.

2. During embroidery, the frame will pass from the color change point [D] through the offset middle position [B] and return to the offset start position [A]. After performing works for applique here, the frame will pass through the offset middle position [B], move to the color change point [D], then start embroidery by switch operation.

3. When embroidery is finished, the frame will pass from the design end point [E] through the offset middle position [B] and return to the offset start position [A].

5-2-1. Explanation on the screen

After step 2 is finished, the frame will return to the offset start position [A] automatically. To move the frame, the setting of "Automatic offset" is necessary. (p.153) If "Automatic Offset" is not set, the frame will move to the design start position [C].
5-2-2. How to operate

The following is an example when inserting the offset mark between step 2 and step 3.

(1) To open screen

(2) To select the step to insert the offset mark

(3) To insert the offset mark

To delete the offset mark

5-3. To return the frame to the offset start position manually (Return to the offset origin)

This function makes the frame return to the offset start position in the middle of embroidery when you stopped the machine. It is possible to operate only when automatic offset is set. The offset middle position is not passed.

5-3-1. Explanation on the screen

6 Return to the offset origin

To return the frame to offset start position

— : Not to execute
○ : To execute
5-3-2. How to operate

**CAUTION**

When performing this operation, do not put your hands etc. on the machine table. Moving frame could injure you.

The following is an example of executing offset return.

**(1)** To open screen

(2) To execute offset return

Pressing SET will move the frame. To return to the original position, perform "Manual offset". (p.145)
To move the frame to the position registered
Chapter 7
Function for storing and deleting of design

1. Design stored in the memory of the machine ........................................160
2. Design stored in USB memory ..............................................................172
1. Design stored in the memory of the machine

1-1. To delete a design (Memory Delete)

1-1-1. Explanation on the screen

How to delete design
One: Delete the design selected one by one.
All: All designs are deleted at once.

1-1-2. How to operate

The following is an example of deleting a selected design.

(1) To open screen

(2) Select a deleting method.

(3) To select and decide a design
1-2. To move a design (Movement of a design)

1-2-1. Explanation on the screen

1-2-2. How to operate

The following is an example of moving a design to the folder (Group 3).

(1) To open screen

(2) To select a design

The operation differs depending on a storing place for the design.

(a) Design in a folder
Design stored in the memory of the machine

(b) Design on the screen

(3) To select destination to move and decide

1-3. To copy a design (Copy of a design)

1-3-1. Explanation on the screen

Folder and Design stored in the memory of the machine

The memory of the machine means the folder and the design stored in "Data Input (Memory)". (p.48)

Destination to copy

Copy a selected design inside or outside the folder.
1-3-2. How to operate

The following is an example of copying a design and storing it in the folder (Group 3).

(1) To open screen

(2) To select a design

The operation differs depending on a storing place for the design.

(a) Design in a folder

(b) Design on the screen

(3) To select the location to store and decide

The screen will be switched.
1-4. To change the file name of the design (Changing design name)

Folder and Design stored in the memory of the machine
The memory of the machine means the folder and the design stored in "Data Input (Memory)". (p.48)

Change column of file name (up to 8 characters)
Delete and input letters.

1-4-1. How to operate
The following is an example of changing the file name of a design from "G001" to "A10".

(1) To open screen

(2) To select a design
The operation differs depending on a storing place for the design.

(a) Design in a folder
Design stored in the memory of the machine

Chapter 7

(b) Design on the screen

(3) To change file name

(a) To return the cursor to the top of the file name

(b) To select "A"

(c) To select "1"

(d) To select "0"

(e) To select "Enter" and decide
1-5. To change a folder name (Changing folder name)

Folder and Design stored in the memory of the machine
The memory of the machine means the folder and the design stored in "Data Input (Memory)".
(p.48)

1-5-1. How to operate

The following is an example of changing the folder name from "Group1" to "Design1".

(1) To open screen

(2) Select a folder.

The screen will be switched.
Change a folder name.

(a) To return the cursor to the top of the folder name:

(b) To select "D":

(c) To set to input small characters:

(d) To select "e":

(e) To select "s":

(f) To input the remaining characters (ign1) in the same way.

(g) To select "Enter" and decide:
1-6. To sort a design (Design sort "in memory")

Sort designs in the memory of the machine. The memory of the machine means the folder and the design stored in "Data Input (Memory)". The folder is displayed ahead of design.

1-6-1. Explanation on the screen

**[a] Priority to sorting**

- **Time**
  
  Give priority to updated time. When selecting "Time", perform the setting of the following [b].

- **File name**
  
  It gives priority to file name. When selecting "File", perform setting of the following [c].

**[b] Sorting method in "Time"**

- **Up**: Old => New
- **Down**: New => Old

**[c] Sorting method in "File Name"**

- **Up**: digit/symbol => ABC
- **Down**: ABC => digit/ symbol
1-6-2. How to operate

The following is an example of setting sort of the design giving the priority to "Time" and to "New => Old".

(1) To set to main screen

(2) To press A key while pressing SET key, and press SET key further

(3) To select priority to sorting

(4) To select sorting method
1-7. To store a design to a USB memory (USB "Save")

1-7-1. Explanation on the screen

Folder and Design stored in the memory of the machine
The memory of the machine means the folder and the design stored in "Data Input (Memory)". (p.48)

Storing mode to USB memory
Usually, select "T3".
1-7-2. How to operate

The following is an example of saving a design into a USB memory.

(1) To set USB memory

(2) To open screen

(3) To cancel the password

   Regarding canceling method, refer to the detail page. (p.126)

(4) To select a design

   The operation differs depending on a storing place for the design.

   (a) Design in a folder

   (b) Design on the screen

   (c) To select "Enter" and decide

   To change a file name, refer to the detail page. (p.164)

(5) To select saving format to USB memory and decide
2. Design stored in USB memory

2-1. To delete a design (USB Delete)

2-1-1. Explanation on the screen

Folder and design stored in USB memory

2-1-2. How to operate

The following is an example of deleting a design.

(1) To set USB memory

(2) To open screen

(3) To select a design

The operation differs depending on a storing place for the design.

(a) Design in a folder
Design stored in USB memory

Chapter 7

(b) Design on the screen

```
Are you ready?

SET
```

Pressing i key will display the design confirmation screen. (p.30)
To return the original screen, press E key.

(4) To delete
2-2. To sort a design (Design sort “USB”)

Sorting designs stored in a USB memory. A folder is displayed ahead of design.

2-2-1. Explanation on the screen

[a] Priority to sorting

Time

Give priority to updated time. When selecting "Time", perform the setting of the following [b].

File name

It gives priority to file name. When selecting "File", perform the setting of the following [c].

[b] Sorting method in "Time"

Up: Old => New
Down: New => Old

[c] Sorting method in "Fail Name"

Up: digit/symbol => ABC
Down: ABC => digit/ symbol
2-2-2. How to operate

The following is an example of setting sort of the design giving the priority to "Time" and to "New => Old".

(1) To set a USB memory
(2) To set to main screen
(3) To press A key while pressing SET key

SET A

SET+A screen will be displayed.

(4) To press A key

A

4 Design sort (USB)

(5) To select priority to sorting

Time

(6) To select sorting method

Down
Design stored in USB memory
Chapter 8
Optional device etc.

1. To make optional device available for use ........................................178
2. To set details of the device ...............................................................187
3. Functions concerning optional device ..............................................190
1. To make optional device available for use

After installation of software, optional device will be set to "Not to use". Therefore, it is necessary to perform setting again.

1-1. Sequin device

This is a setting for making sequin device available for use. For details of the device, refer to the separate manual "Sequin Device".

1-1-1. Explanation on the screen

![Sequin device screen]

- [a] Type of Sequin Device equipped to the left side
  - : Not to use the device
  - SQ: High Speed Sequin Device
  - SQ4: Sequin Device IV

- [b] Type of Sequin Device equipped to the right side
  - The contents of settings are the same as [a].

1-1-2. How to operate

The following is an example of equipping Sequin Device IV to the left side.

(1) To set to main screen

(2) To press F3 key while pressing SET

(3) To press F3 key
(4) To select type of sequin

Proceed to the “Sequin Device IV” continuously. (p.187)
1-2. Network

This is the setting to make the network available for use by LAN connection.

1-2-1. Explanation on the screen

- **10 Network**
  - **NO**
  - NO: Not to use
  - DG/ML (V1):
    - Connect with DG/ML by Pulse or Autograph via Network.
  - SideKick (V2):
    - Connect with SideKick via Network.

1-2-2. How to operate

The following is an example for connecting with DG/ML by Pulse via Network.

1. To set to main screen

2. To press F3 key while pressing SET

   SET + F3 screen will be displayed.

3. To press F3 key

   F3

4. To connect with DG/ML by Pulse via Network
To make optional device available for use

1-3. Zigzag Cording Device

This is a setting for making Zigzag cording device available for use. For details of the device, refer to the separate manual "Zigzag cording device".

1-3-1. Explanation on the screen

<table>
<thead>
<tr>
<th>5 Zigzag Cording Device</th>
<th>NO</th>
</tr>
</thead>
</table>

L: Equipped to the left side
R: Equipped to the right side
NO: Not to use

1-3-2. How to operate

The following is an example to equip Zigzag cording device to the right side.

(1) To open screen

F3

(2) To equip Zigzag cording device to the right side

R

Proceed to "To make Air compressor available for use (Air pressure sensor)" continuously. (p.190)
1-4. Lochrose Embroidery Device

This is a setting for making Lochrose Embroidery Device available for use. For details of the device, refer to the separate manual "Lochrose Embroidery Device".

1-4-1. Explanation on the screen

[10 Lochrose embroidery device]

[a] Type of device
   L: Equipped to left side
   R: Equipped to right side
   L+R: Equipped to left and right side
   NO: Not to equip

[b] Jump insertion
   Setting whether or not to insert a non-data jump code automatically before feeding out beads
   YES: To insert
       When beads can not be sewn effectually, select "YES". However, productivity will be decreased.
   NO: Not to insert

[c] Jump insertion
   Setting whether or not to insert a non-data jump code automatically after feeding out beads
   YES: To insert
       When you desire to tighten stitching tension of beads, select "YES". However, productivity will be decreased.
   NO: Not to insert

[d] Moving up of device
   [a] Type of device
   [b] Jump insertion
   [c] Jump insertion
   [d] Moving up of device
To make optional device available for use

Chapter 8

[d] Moving up of device at frame stepping
   YES: To perform
   NO: Not to perform

CAUTION

⚠ Selecting "NO" will increase manufacturing efficiency. However, the device could interfere with the frame resulting in its breakage depending on design or frame type to use.

1-4-2. How to operate

The following is an example that the device is equipped to the left side and Jump is set to "To insert" before feeding out beads.

(1) To open screen

(2) To equip to left side

(3) To insert non-data jump code automatically

Proceed to "To make Air compressor available for use (Air pressure sensor)" continuously. (p.190)
1-5. Cording Device

This is a setting for making Coding Device (KB-2M) available for use. For details of the device, refer to the separate manual "KB-2M (L&R)".

1-5-1. Explanation on the screen

1-5-2. How to operate

The following is an example of the setting to equip Cording device to the left side.

(1) To open screen

(2) To use cording device

(3) To select needle bar No.
1-6. Boring Device

This is a setting for making Boring Device available for use. For details of the device, refer to the separate manual "Boring Device II".

1-6-1. Explanation on the screen

Table: Setting of Boring

<table>
<thead>
<tr>
<th>Value</th>
<th>Device</th>
<th>Frame travel[^1]</th>
<th>Scale up/down, rotation, reversion of design</th>
</tr>
</thead>
<tbody>
<tr>
<td>NO</td>
<td>Not to use</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Step 1[^2]</td>
<td>To use</td>
<td>Not to perform</td>
<td>Unable</td>
</tr>
<tr>
<td>Step 3[^3]</td>
<td>To perform</td>
<td>Enable</td>
<td></td>
</tr>
</tbody>
</table>

[^1]: When switching to boring, the frame will move by 12 mm in lengthwise direction.

[^2]: Select if there is frame travel data in the design.

[^3]: Select if there is not frame travel data in the design.

1-6-2. How to operate

The following is an example that Boring device is set to "Step 3" and equipped to the needle bar No. "4".

(1) To open screen

F3

1 Boring

SET
To make optional device available for use

(2) To select boring step

(3) To select needle bar No.

1-7. Auto sub-table lifter

This is a setting for making Auto sub-table lifter available for use. This function corresponds to the multi-head machine only.

1-7-1. Explanation on the screen

1-7-2. How to operate

The following is an example of setting Bobbin Changer to "To use".

(1) To open screen

(2) To select YES (to use)
2. To set details of the device

2-1. Sequin Device IV

Set the detail of the device.

2-1-1. Explanation on the screen

[a] Feed amount of sequin chips for the device at the left side
Select a value that adds about 1.0 to an external diameter of chip as a rough standard.

[b] Feed amount of sequin chips for the device at the right side
Select a value that adds about 1.0 to an external diameter of chip as a rough standard.

[c] Insertion of jump data when a sequin chip is sewn on
Select "YES" when sequin chips are not sewn effectively. However, productivity will be decreased.
YES: To perform
NO: Not to perform

[d] Moving up of device at frame stepping
YES: To perform
NO: Not to perform

[e] Feed out sequin chips one by one.

CAUTION

Selecting "NO" will increase manufacturing efficiency. However, the device could interfere with the frame resulting in its breakage depending on design or frame type to use.

[e] Feed out sequin chips one by one by manual operation. (p.189)
Feed amount is the value selected at above [a] or [b].
L: Device at the left side
R: Device at the right side
2-1-2. How to operate

The following is an example when setting to the below condition.

Feed amount of sequin chips of the device at the left side: 4.0
Insertion of jump data: To perform
Moving up of device at frame stepping: To perform

(1) To open screen

(2) To select the feed amount of sequin chips of the device at the left side

(3) To insert jump data

(4) To move up the device at frame stepping

Proceed to "To make Air compressor available for use (Air Pressure Sensor) continuously. (p.190)"
To set details of the device

Chapter 8

2-1-3. How to operate

⚠️ CAUTION

⚠️ When performing this operation, do not put your hands etc. near the needle or on the machine table. Otherwise, moving up/down of the Sequin Device or moving right/left of the needle bar case could injure you.

The following is the example of feeding out sequin chips of the right side Sequin Device one by one.

(1) Set the tension base switch to “Middle” position. (This head is not to be suspended head.)

(2) To open screen

![Diagram of F3 and SET buttons with labels 2 Sequin and R]

(3) To move the cursor to “Sequin chip feed”

(4) To select R (Right side Sequin Device)

![Diagram of tension base switch and SET button with label R]

Pressing SET will perform Color Change to sequin needle.

(5) To feed out sequin chips

Every time raising the tension base switch will feed out sequin chips one by one.
3. Functions concerning optional device

3-1. To make the air compressor available for use (Air Pressure Sensor)

Set this function when the following optional devices are equipped.

- Sequin Device IV
- Zigzag Cording Device
- Lochrose Device
- Auto Clamp Frame

3-1-1. Explanation on the screen

![Screen Display]

YES: To use air compressor
NO: Not to use

3-1-2. Explanation for operation

```
<table>
<thead>
<tr>
<th>Action</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>(1)</td>
<td>To set to main screen</td>
</tr>
<tr>
<td>(2)</td>
<td>To press F3 key while pressing SET</td>
</tr>
<tr>
<td>(3)</td>
<td>To press F3 key</td>
</tr>
</tbody>
</table>
```

SET + F3 screen will be displayed.

When you use specified option, select "YES". Selecting "NO" could damage Sequin device and/or the machine by moving down of Sequin device when Air pressure is decreased in the middle of stitching.

The following is an example for making Air compressor available for use.

(1) To set to main screen

(2) To press F3 key while pressing SET

(3) To press F3 key

![Screen Display]
(4) To use air compressor

- YES
- SET
Functions concerning optional device

3-2. Lochrose counter

Display the remaining number of beads of each head.

3-2-1. Explanation on the screen

3-2-2. How to operate

Press i key until the screen described above will appear.
Chapter 9
Countermeasure when some trouble occurs in the machine

1. Countermeasure when the machine stopped.................................194
2. Trouble examples and Corrective actions ......................................201
1. Countermeasure when the machine stopped

When the machine stops during embroidery, a code No. indicating stop factor will be displayed on the screen (the illustration below is an example).

Restoring method differs depending on the code Nos. described.

1-1. Normal stop

It is displayed in green on the screen. It is not a stop by abnormality of the machine.

The list below also includes code Nos. which are not displayed (common to TFMX, TFMS and TEMX-C).

<table>
<thead>
<tr>
<th>No.</th>
<th>Stop Factor</th>
<th>How to restore</th>
</tr>
</thead>
<tbody>
<tr>
<td>1B1</td>
<td>Stop by frame stepping code</td>
<td></td>
</tr>
<tr>
<td>1B2</td>
<td>Stop by color change code</td>
<td></td>
</tr>
<tr>
<td>1B3</td>
<td>Stop by end code</td>
<td></td>
</tr>
<tr>
<td>1B4</td>
<td>Stop by thread trimming code</td>
<td></td>
</tr>
<tr>
<td>1B6</td>
<td>Stop by automatic color change (free setting) offset code</td>
<td>Perform &quot;Start operation&quot; or &quot;Frame back/forward operation&quot;, or press any operation key (excluding manual frame travel key) to continue operation of the machine.</td>
</tr>
<tr>
<td>1B8</td>
<td>Stop by temporary stop code</td>
<td></td>
</tr>
<tr>
<td>1C1</td>
<td>Stop by stop switch during frame stepping</td>
<td>Start to the machine.</td>
</tr>
<tr>
<td></td>
<td>Stop by stop switch during trace</td>
<td>To start the operation again, press SET key. To reset the setting, press E key.</td>
</tr>
<tr>
<td></td>
<td>Do not turn OFF the power during display of 1C1. It may not possible to continue embroidery if the power is turned OFF.</td>
<td></td>
</tr>
<tr>
<td>1D1</td>
<td>Stop at all-head sewing start point after frame back</td>
<td>Start the machine and continue embroidery.</td>
</tr>
<tr>
<td>1D2</td>
<td>Stop by preset halt (except oil, lochrose)</td>
<td></td>
</tr>
<tr>
<td>1D3</td>
<td>Stop by moving up of zigzag cording device</td>
<td>Press the E key.</td>
</tr>
<tr>
<td>1D5</td>
<td>Stop by Preset halt (run out of beads)</td>
<td></td>
</tr>
<tr>
<td>OIL</td>
<td>Preset halt (Oil)</td>
<td>Lubricate to the necessary spots, and press E key.</td>
</tr>
</tbody>
</table>
## 1-2. Abnormal stop

It is displayed in red on the screen. The trouble will occur when the movement of the machine comes off from normal position etc.

![Image of code 2C2]

<table>
<thead>
<tr>
<th>No.</th>
<th>Stop Factor</th>
<th>How to restore</th>
</tr>
</thead>
<tbody>
<tr>
<td>211</td>
<td>The main shaft has stopped deviating from the fixed position.</td>
<td>Return the main shaft to the fixed position. Check the main shaft fixed position sensor.</td>
</tr>
<tr>
<td>212</td>
<td>The Zigzag Cording Device was tried to move up/down with the needle bar lowered.</td>
<td>Do not move up/down the Zigzag Cording Device.</td>
</tr>
<tr>
<td>221 (*)</td>
<td>The embroidery frame moved to the travel limit position (left) (-X direction).</td>
<td>Move the frame manually so that embroidery can be performed within the set range.</td>
</tr>
<tr>
<td>222 (*)</td>
<td>The embroidery frame moved to the travel limit position (right) (-X direction).</td>
<td>*Only the model that has limit switch at drive system is applicable.</td>
</tr>
<tr>
<td>223 (*)</td>
<td>The embroidery frame moved to the travel limit position (front) (+Y direction).</td>
<td></td>
</tr>
<tr>
<td>224 (*)</td>
<td>The embroidery frame moved to the travel limit position (rear) (-Y direction).</td>
<td></td>
</tr>
<tr>
<td>225</td>
<td>The frame move to the limit position during trace.</td>
<td>Press the E key. Check the current frame position.</td>
</tr>
<tr>
<td></td>
<td>The frame moved to the software limit position during trace.</td>
<td>Press the E key. Check setting range of software frame limit.</td>
</tr>
<tr>
<td>228</td>
<td>Table up/down operation was performed when the frame was positioned at the front.</td>
<td>Move the frame to the rearmost position.</td>
</tr>
<tr>
<td>229</td>
<td>The machine was stopped during Power resume.</td>
<td>Perform Power resume again.</td>
</tr>
<tr>
<td>251</td>
<td>Oil of lubricating pump is lacking.</td>
<td>Lubricate to the lubrication tank.</td>
</tr>
<tr>
<td>258</td>
<td>Upper dead point sensor error (Sequin device III only)</td>
<td>Check the sensor.</td>
</tr>
<tr>
<td>259</td>
<td>Lower dead point sensor error (Sequin device III, zigzag cording device)</td>
<td>Check the sensor.</td>
</tr>
<tr>
<td>25A</td>
<td>Sequin color change sensor error (Sequin device III only)</td>
<td>Check the sensor.</td>
</tr>
<tr>
<td>291</td>
<td>Upper thread breakage is detected.</td>
<td>Check thread.</td>
</tr>
<tr>
<td></td>
<td>TC sensor card error</td>
<td>Replace TC sensor card.</td>
</tr>
</tbody>
</table>
### Countermeasure when the machine stopped

<table>
<thead>
<tr>
<th>No.</th>
<th>Stop Factor</th>
<th>How to restore</th>
</tr>
</thead>
<tbody>
<tr>
<td>292</td>
<td>Material feed error occurred at zigzag cording device.</td>
<td>Check the material. Check the sensor card, harness etc. of zigzag cording device.</td>
</tr>
<tr>
<td>293</td>
<td>Under thread breakage is detected.</td>
<td>Check under thread.</td>
</tr>
<tr>
<td>294</td>
<td>Absence of sequin material is detected (Sequin device III only).</td>
<td>Check the material.</td>
</tr>
<tr>
<td>2B1</td>
<td>Network does not work normally.</td>
<td>Check connecting status of cable, setting status of device such as personal computer.</td>
</tr>
<tr>
<td>2B3</td>
<td>Data exists in an end code.</td>
<td>Correct design data.</td>
</tr>
<tr>
<td>2B4</td>
<td>Function code error</td>
<td></td>
</tr>
<tr>
<td>2B5</td>
<td>Sequin data error</td>
<td></td>
</tr>
<tr>
<td>2B7</td>
<td>Data set is not completed.</td>
<td>Set data.</td>
</tr>
<tr>
<td>2BA</td>
<td>Memory capacity exceeded</td>
<td>Delete unnecessary design(s) registered in the memory.</td>
</tr>
<tr>
<td>2BB</td>
<td>Available range to perform frame back was exceeded.</td>
<td>Do not perform frame back any more.</td>
</tr>
<tr>
<td>2BC</td>
<td>No design is registered in the memory at all.</td>
<td>Register designs in the memory.</td>
</tr>
<tr>
<td></td>
<td>The delete of design in process of embroidery was attempted.</td>
<td>To perform memory delete of design in process of embroidery, perform data input of other data or perform data input of the same design again.</td>
</tr>
<tr>
<td></td>
<td>Data edit was attempted during embroidery.</td>
<td>Do not perform data edit during embroidery.</td>
</tr>
<tr>
<td>2BE</td>
<td>Start and End codes are not set as a one pair in satin conversion, sequin, boring and low speed code.</td>
<td>Set again so that start and end codes become as a pair.</td>
</tr>
<tr>
<td>2C1</td>
<td>Machine was started during setting of data edit or needle bar selection.</td>
<td>Start the machine after ending the setting.</td>
</tr>
<tr>
<td>2C2</td>
<td>Setting for option is incorrect.</td>
<td>Set correctly.</td>
</tr>
<tr>
<td>2C6</td>
<td>The machine was operated during working of bobbin changer.</td>
<td>Do not operate the machine during working of bobbin changer.</td>
</tr>
<tr>
<td>2C7</td>
<td>Wrong password is input.</td>
<td>After pressing E key, input the correct password.</td>
</tr>
<tr>
<td>2C8</td>
<td>Sleep mode key was pressed during trace.</td>
<td>Press the E key.</td>
</tr>
<tr>
<td>2C9</td>
<td>Time was changed during setting of Password (Time-based Limit).</td>
<td>Press the E key.</td>
</tr>
<tr>
<td>2CA</td>
<td>The power is not turned &quot;OFF/ON&quot;.</td>
<td>Turn &quot;OFF/ON&quot; the power.</td>
</tr>
<tr>
<td>2CE</td>
<td>Stop by safety device</td>
<td>After removing the obstacle, press E key, then press the start switch.</td>
</tr>
<tr>
<td>2E2</td>
<td>Air pressure of the regulator has become lower than the rated value.</td>
<td>Check the air compressor. Check the origin of air supply.</td>
</tr>
<tr>
<td>2E3</td>
<td>Power supply failed during operation.</td>
<td>Perform power resume operation after turning ON the power.</td>
</tr>
<tr>
<td>B01</td>
<td>Abnormality occurred in reading/writing.</td>
<td>Copy design to a new USB memory and use it.</td>
</tr>
</tbody>
</table>
### Countermeasure when the machine stopped

#### Table 1-2. Stop due to malfunction

<table>
<thead>
<tr>
<th>No.</th>
<th>Stop Factor</th>
<th>How to restore</th>
</tr>
</thead>
<tbody>
<tr>
<td>B04</td>
<td>USB memory is not inserted.</td>
<td>Insert.</td>
</tr>
<tr>
<td>BF1</td>
<td>At network connection to host PC, IP address was not obtainable from DNS server.</td>
<td>Check IP address of DNS server. Correct &quot;IP Setting.ini&quot; file. Check operating condition of DNS server.</td>
</tr>
<tr>
<td>BC2</td>
<td>The same file name exists in USB memory.</td>
<td>Change the file name.</td>
</tr>
<tr>
<td>BC5</td>
<td>Insufficient remaining capacity of USB memory</td>
<td>Replace with a USB memory with enough remaining capacity.</td>
</tr>
<tr>
<td>BC1</td>
<td>Design tried to input is not in design spooler.</td>
<td>Check the condition of design spooler.</td>
</tr>
<tr>
<td>BC3</td>
<td>Data set was performed without frame origin memory after installation of software.</td>
<td>Perform frame origin memory. (p.148)</td>
</tr>
<tr>
<td>BC4</td>
<td>Machine was started during moving up/down of sequin device.</td>
<td>Start the device after completion of up/down.</td>
</tr>
<tr>
<td>BC5</td>
<td>Setting error of sequin device III</td>
<td>Check the setting of panel.</td>
</tr>
<tr>
<td>BC6</td>
<td>General external device is operating.</td>
<td>Operate the machine after general external device is stopped.</td>
</tr>
</tbody>
</table>

#### Table 1-3. Stop due to malfunction

It is displayed in red on the screen. It is caused by card, harness or communication error. If the below code No. is displayed, consult the distributor.

<table>
<thead>
<tr>
<th>No.</th>
<th>Stop Factor</th>
<th>How to restore</th>
</tr>
</thead>
<tbody>
<tr>
<td>311</td>
<td>Encoder A signal does not change for 5 seconds.</td>
<td>Check encoder or encoder signal lines. Check excitation of the main shaft driver.</td>
</tr>
<tr>
<td>312</td>
<td>Encoder Z signal does not change (TFMX, TFMS). Fixed position signal (Main shaft Z signal) does not change during operation (TEMX-C).</td>
<td>Press the E key. Check the encoder or encoder signal lines.</td>
</tr>
<tr>
<td>No.</td>
<td>Stop Factor</td>
<td>How to restore</td>
</tr>
<tr>
<td>-----</td>
<td>----------------------------------------------------------------------------</td>
<td>------------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>316</td>
<td>Main shaft motor error or main shaft driver error</td>
<td>Turn &quot;OFF/ON&quot; the power. Or switch from sleep mode to normal mode. (Each driver setting will be reset.) When it is not possible to recover from the trouble, replace the card.</td>
</tr>
</tbody>
</table>
| 322++ | Abnormality of X-axis driver  
+Description of mark differs depending on factor.  
The same is applied to No.323. | Turn "OFF/ON" the power. Check connection of each frame driver motor and/or sensor wire. Replace the corresponding frame driver or frame motor. |
| 323++ | Abnormality of Y-axis driver | Turn "OFF/ON" the power. Or switch from sleep mode to normal mode. (Each driver setting will be reset.) When it is not possible to recover from the trouble, replace the card. |
| 32A | The machine cannot memorize excitation of X-axis driver. | Turn "OFF/ON" the power. Check connection of each frame driver motor and/or sensor wire. Replace the corresponding frame driver or frame motor. |
| 32B | The machine cannot memorize excitation of Y-axis driver. | Turn "OFF/ON" the power. Or switch from sleep mode to normal mode. (Each driver setting will be reset.) When it is not possible to recover from the trouble, replace the card. |
| 32C | Incompletion of X-axis frame travel | Operate the bobbin changer manually after resetting the error, and check/adjust the place where motion error occurred. |
| 32D | Incompletion of Y-axis frame travel | Check setting for embroidery space at software installation. Check the sensor card. |
| 32E | The machine cannot complete X-axis origin search within the time. | Check the card. |
| 32F | The machine cannot complete Y-axis origin search within the time. | Check the card. |
| 331 | Abnormal signal of bobbin changer has been detected. | Check the card. |
| 353 | Abnormality occurred in up/down color change driver (Sequin device III only). | Check the card. |
| 354 | Sequin/zigzag cord motor, color change motor, ATH motor overcurrent  
(Color change motor and ATH motor are applicable to single-head machine only.) | Turn OFF/ON the power. Check and/or replace the head card. Decrease rpm. |
| 362 | Jump motor overcurrent | Check the color change motor and power supply circuit. Check the potentiometer (needle position sensor). |
| 382 | The needle position signal status during color change does not change for 1 second and more. | Check the color change motor and power supply circuit. Check the potentiometer (needle position sensor). |
| 383 | Needle position was abnormal. | Check setting for the number of needles at installation of software. |
| 387 | Color change motor sensor error | Check encoder signal wire of color change motor. |
| 3A6 | ATH movable knife retractable position has become nonuniform. | Check the position of ATH movable knife. |
### Countermeasure when the machine stopped

<table>
<thead>
<tr>
<th>No.</th>
<th>Stop Factor</th>
<th>How to restore</th>
</tr>
</thead>
<tbody>
<tr>
<td>3A9</td>
<td>Upper thread holding motor overcurrent</td>
<td>Turn OFF/ON the power. Check and/or replace head card.</td>
</tr>
<tr>
<td>3B5</td>
<td>Communication error (between CPU card USB hub), power supply system error of 280 V or 24 V, abnormality of power supply card</td>
<td>Check harness connection between CPU card and USB hub. Check and/or replace power supply card. Check and/or replace DC power supply.</td>
</tr>
<tr>
<td></td>
<td>Wrong selection of model at installation of software</td>
<td>Install the software again.</td>
</tr>
<tr>
<td>3B5</td>
<td>Communication error (among CPU card, USB hub and machine card), USB communication error due to color change position, 24 V power supply system error, power supply card error</td>
<td>Check harness connection among CPU card, USB hub and machine card. Check and/or replace power supply card. Check and/or replace 24 V power supply.</td>
</tr>
<tr>
<td>MC</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3B5</td>
<td>Communication error (among CPU card, USB hub and main shaft driver), USB communication error due to color change position, 280 V power supply system error, power supply card error</td>
<td>Check harness connection among CPU card, USB hub and main shaft driver. Check and/or replace power supply card.</td>
</tr>
<tr>
<td>S</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3B5</td>
<td>Communication error (among CPU card, USB hub and X-axis driver), USB communication error due to color change position, 280 V power supply system error, power supply card error</td>
<td>Check harness connection among CPU card, USB hub and X-axis driver. Check and/or replace power supply card.</td>
</tr>
<tr>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3B5</td>
<td>Communication error (among CPU card, USB hub and Y-axis driver), USB communication error due to color change position, 280 V power supply system error, power supply card error</td>
<td>Check harness connection among CPU card, USB hub and Y-axis driver. Check and/or replace power supply card.</td>
</tr>
<tr>
<td>Y</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3B7</td>
<td>Communication error inside the controller, bad communication (between CPU card and switch card)</td>
<td>Turn &quot;OFF/ON&quot; the power. Check harness connection between CPU card and switch card. Replace CPU card or switch card.</td>
</tr>
<tr>
<td>3B8</td>
<td>Impossible communication with sequin device III</td>
<td>Check the sequin controller card or connection.</td>
</tr>
<tr>
<td>3B9</td>
<td>Communication error of up/down color change driver (Sequin device III only).</td>
<td>Check the sequin driver card (Occurred only when power is turned ON).</td>
</tr>
<tr>
<td>3BA</td>
<td>Communication error with sequin device III</td>
<td>Check the sequin controller card or connection (Occurred only when power is turned ON).</td>
</tr>
<tr>
<td>3BC</td>
<td>Communication speed error (machine card)</td>
<td>Check/replace machine card.</td>
</tr>
<tr>
<td>MC</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3BC</td>
<td>Communication speed error (main shaft driver)</td>
<td>Check and/or replace the main shaft driver.</td>
</tr>
<tr>
<td>S</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3BC</td>
<td>Communication speed error (X-axis driver)</td>
<td>Check/replace the X-axis driver.</td>
</tr>
<tr>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3BC</td>
<td>Communication speed error (Y-axis driver)</td>
<td>Check/replace the Y-axis driver.</td>
</tr>
</tbody>
</table>
### Countermeasure when the machine stopped

<table>
<thead>
<tr>
<th>No.</th>
<th>Stop Factor</th>
<th>How to restore</th>
</tr>
</thead>
<tbody>
<tr>
<td>3BD</td>
<td>Error of ID written to the card. Driver not for machine card is connected.</td>
<td>Check/replace machine card.</td>
</tr>
<tr>
<td>MC</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3BD</td>
<td>Refer to 3BD (MC) described above. Driver not for the main shaft is connected.</td>
<td>Check and/or replace the main shaft driver.</td>
</tr>
<tr>
<td>S</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3BD</td>
<td>Refer to 3BD (MC) described above. Driver not for X-axis is connected.</td>
<td>Check/replace the X-axis driver.</td>
</tr>
<tr>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3BD</td>
<td>Refer to 3BD (MC) described above. Driver not for Y-axis is connected.</td>
<td>Check/replace the Y-axis driver.</td>
</tr>
<tr>
<td>Y</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3BF</td>
<td>Remaining number of beads cannot be grasped.</td>
<td>Check and/or replace the head card.</td>
</tr>
<tr>
<td>3C1</td>
<td>Contact error of the bar switch or start/stop switch, breakage of the switch harness, or bad connection of the connector</td>
<td>Check the connector and the connecting terminal. Replace the limit switch/switch assembly.</td>
</tr>
<tr>
<td>3C3</td>
<td>Mis-setting of the number of heads in &quot;Machine Type&quot;</td>
<td>Check the contents of setting.</td>
</tr>
<tr>
<td>3D6</td>
<td>There is abnormality in the program or in the CPU card.</td>
<td>Check the CPU card.</td>
</tr>
<tr>
<td></td>
<td>The software is not installed normally.</td>
<td>Install the software.</td>
</tr>
<tr>
<td>3DB</td>
<td>Lack of system RAM capacity</td>
<td>Turn &quot;OFF/ON&quot; the power. Replace CPU card.</td>
</tr>
<tr>
<td>3DC</td>
<td>Abnormality of memory device</td>
<td>Turn &quot;OFF/ON&quot; the power. Install the software. Replace the DOM or CPU card.</td>
</tr>
<tr>
<td>3DD</td>
<td>Abnormal system installation</td>
<td>Install the software. Replace DOM or CPU card.</td>
</tr>
<tr>
<td>3DE</td>
<td>Abnormality of external memory device</td>
<td>Turn &quot;OFF/ON&quot; the power. Check/replace the USB memory, or replace the CPU card.</td>
</tr>
<tr>
<td>6D1</td>
<td>File error of frame drive parameter</td>
<td>Install the software.</td>
</tr>
<tr>
<td>6D2</td>
<td>Disconnection of communication line</td>
<td>Turn &quot;OFF/ON&quot; the power. Check harness connection between CPU card and USB hub.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Check and/or replace power supply card.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Check and/or replace DC power supply.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Install the software again.</td>
</tr>
<tr>
<td>6D3</td>
<td>Disconnection of USB communication line in I/O card, communication error</td>
<td>Turn &quot;OFF/ON&quot; the power. Check connection of USB cable</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Check and/or replace power supply card.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Check and/or replace DC power supply.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Install the software again.</td>
</tr>
</tbody>
</table>
2. Trouble examples and Corrective actions

2-1. Thread breakage is highly visible.

<table>
<thead>
<tr>
<th>Cause</th>
<th>Troubleshooting</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bad thread tension</td>
<td>Adjust tension. TFMX, TEMX-C: Upper thread 120 to 140 g, Under thread 20 to 30 g</td>
</tr>
<tr>
<td></td>
<td>TFMX: Upper thread around 100 g, Under thread around 40 g</td>
</tr>
<tr>
<td>Quality of thread is bad. Poor thread flow</td>
<td>Use good quality thread. Spray silicone.</td>
</tr>
<tr>
<td>Direction of needle is bad or needle bends.</td>
<td>Adjust to face to the front or to the right a bit. Replace.</td>
</tr>
<tr>
<td>Applique glue is stuck on needle.</td>
<td>Remove adhered glue.</td>
</tr>
<tr>
<td>Contamination, run-out of oil of rotary hook (TFMX, TEMX-C)</td>
<td>Clean and lubricate the machine.</td>
</tr>
<tr>
<td>Contamination, run-out of oil of shuttle hook (TFMS)</td>
<td></td>
</tr>
<tr>
<td>There are many fine stitches of 0.5 mm or less in design data.</td>
<td>Remove fine stitch(es). (p.104)</td>
</tr>
<tr>
<td>The fabric is lifted too much against the needle plate. The fabric touches the needle plate too much.</td>
<td>Stretch the fabric again so that it touches needle plate lightly.</td>
</tr>
<tr>
<td>Run-out of oil of needle bar</td>
<td>Lubricate.</td>
</tr>
<tr>
<td>There is a scratch on the thread course.</td>
<td>Grind it with sandpaper etc. Replace.</td>
</tr>
<tr>
<td>Bad height of presser foot</td>
<td>Perform adjustment so that height fits to fabric/material.</td>
</tr>
</tbody>
</table>

If the followings seem to cause the trouble, please ask the distributor for information.

<table>
<thead>
<tr>
<th>TFMX, TEMX-C</th>
<th>The gap between rotary hook and rotary hook support is narrow. Timing between needle and rotary hook is too early or too late. Scratch, abrasion of rotary hook.</th>
</tr>
</thead>
<tbody>
<tr>
<td>TFMX, TEMX-C</td>
<td>Timing between needle and shuttle hook is too early or too late. Scratch, abrasion of shuttle hook.</td>
</tr>
<tr>
<td>Common to models</td>
<td>The gap between needle and hook point is not suitable. Bad adjustment of lower dead point and/or upper dead point of needle bar. There is a play on the fringe of the frame. Rotation of the main shaft is not smooth. Abrasion/breakage of neighboring parts of take-up lever drive and/or needle bar drive. Play of needle bar case (in right and left direction) is big.</td>
</tr>
</tbody>
</table>
### 2-2. Needle breaks.

<table>
<thead>
<tr>
<th>Cause</th>
<th>Troubleshooting</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bad thread tension</td>
<td>Adjust tension.</td>
</tr>
<tr>
<td>Density of design data is very high.</td>
<td>Correct data. Delete unnecessary underlay stitching.</td>
</tr>
<tr>
<td>The material is too thick or hard.</td>
<td>Use material suitable for embroidery.</td>
</tr>
<tr>
<td>Bobbin is deformed and it touches the needle.</td>
<td>Replace the bobbin.</td>
</tr>
<tr>
<td>Bad quality of needle, mismatching to embroidery condition</td>
<td>Use good quality needle. Use needle that fits to embroidery condition.</td>
</tr>
<tr>
<td>Vibration of the machine is big.</td>
<td>Adjust leveling.</td>
</tr>
</tbody>
</table>

If the followings seem to cause the trouble, please ask the distributor for information.

<table>
<thead>
<tr>
<th>Model</th>
<th>Cause</th>
</tr>
</thead>
<tbody>
<tr>
<td>TFMX, TEMX-C</td>
<td>Abrasion of needle catcher of rotary hook.</td>
</tr>
<tr>
<td>TFMS</td>
<td>Abrasion of shuttle hook driver.</td>
</tr>
<tr>
<td>Common to models</td>
<td>The gap between needle and hook point is not suitable. Bad needle location. Play of needle bar case (in right and left direction) is big. The floor vibrates. There is a play on the fringe of the frame.</td>
</tr>
</tbody>
</table>

### 2-3. Bad finishing of sewing

<table>
<thead>
<tr>
<th>Cause</th>
<th>Troubleshooting</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bad thread tension</td>
<td>Adjust tension.</td>
</tr>
<tr>
<td>Quality of thread is bad. Poor thread flow</td>
<td>Use good quality thread. Spray silicone.</td>
</tr>
<tr>
<td>Density of design data does not match with material and/or thread.</td>
<td>Correct data.</td>
</tr>
<tr>
<td>Bad frame attaching and fixing of the fabric</td>
<td>Attach the frame correctly. Fix the fabric firmly.</td>
</tr>
<tr>
<td>Thread, needle and/or size of needle plate do not match with embroidery.</td>
<td>Make combination that fits to design data/material.</td>
</tr>
<tr>
<td>R.P.M. is too high.</td>
<td>Decrease R.P.M.</td>
</tr>
</tbody>
</table>

If the followings seem to cause the trouble, please ask the distributor for information.

- There is a play on the fringe of frame.
- Abrasion and breakage of neighboring parts of take-up lever drive and needle bar drive.
- Bad take-up lever timing.
- Belt tension of drive system is too strong or too weak.
- Belt tension of drive system is too strong or too weak.
- Setting for the machine does not match embroidery condition.
2-4. To suspend the error head

When it becomes impossible to perform embroidering by all heads due to malfunctioning of tension base card, this working makes the remaining heads perform embroidering by making the head with occurrence of trouble become suspended head. It corresponds only to the multi-head machine.

![DANGER]

To detach the thread stand plate, be sure to turn OFF the power. There could be danger of electric shock.

2-4-1. Working procedure

(1) Detach the thread stand plate.
(2) Connect the jumper connector to the connector of the head card.

To suspend the third head, connect the jumper connector to the connector for odd-numbered head.

One piece of head card is used for two heads.
Chapter 10
Maintenance and Inspection

1. Items that must be followed carefully ............................................. 206
2. Cleaning ........................................................................................ 207
3. Lubrication .................................................................................... 209
4. Greasing ....................................................................................... 211
5. Inspection, Repair ........................................................................ 214
1. Items that must be followed carefully

![DANGER]

The spots as shown below are attached with cards that generate high voltage. Other personnel than the service man approved by TAJIMA should not open the covers. You could get an electric shock of high voltage.

![WARNING]

- Daily maintenance (cleaning, lubrication, greasing, inspection) should be performed by personnel who has been trained properly.
- "Repair" and "Replacement of electrical component" must be done only by the service personnel assigned and trained by Tajima or qualified technician. (Consult your distributor.)
- When starting operation again, attach all the detached covers as they originally were.

![CAUTION]

- Perform daily maintenance (cleaning, lubrication, greasing, inspection). Neglect of daily maintenance could cause troubles. Damage due to neglect of daily maintenance may be judged as "Outside the scope of warranty".
- If the machine is not used for a long period, turn the power switch ON in regular intervals. Although each card of the machine has a backup battery, data may be lost for about one month because voltage of the battery will come down gradually due to discharge when power switch is turned off.
- Assure enough illumination. Assure 300 lux or more for working areas including underneath part of the machine table when changing under threads or performing daily maintenance.
- Do not turn ON the power with the main shaft fixed. The machine could be broken.
2. Cleaning

**WARNING**

⚠️ When performing cleaning, be sure to turn off the power switch. You could be injured seriously by being entangled in the machine.

Clean each section by using a commercially available cleaning tool or brush (accessory). Using of an Vacuum cleaner or an Air compressor will facilitate working.

Main cleaning spots are indicated by an arrow in the figure below. If dirt is highly visible at other spots besides these spots, clean up there accordingly.

1. ATH, rotary hook

   Cleaning cycle: Every day

An example when using an air compressor
(2) Head

A is the illustration for the single-head machine.
B is the illustration for the multi-head machine.

(3) Drive system

Cleaning cycle: Once a week
3. Lubrication

![WARNING]

To perform lubrication of the machine, turn off the power switch. You may sustain severe injuries due to being entangled by moving machine units.

Select TF oil (packed with the machine), or the equivalent (viscosity grade = equivalent to VG20) to this one for use.

To perform lubrication, use the oiler (accessory) and its nozzle (accessory).

(1) Rotary hook

There are 2 lubricating spots (lubrication hole and raceway at the hook). When lubricating to the lubrication hole, attach the nozzle (accessory) to the tip of the oiler. Cut the tip of the nozzle according to necessary length.

Lubrication cycle: Once/5 to 6 hours
(2) Inside of head

Lubrication cycle: Once/week

Lubricate spots C and D with main shaft angle set to 180°.
4. Greasing

Before greasing, consult the distributor.

⚠️ WARNING ⚠️
During machine greasing, turn off the power switch. You may sustain severe injuries due to being entangled by moving machine units.

⚠️ CAUTION ⚠️
Use a grease specified (described below) by Tajima or equivalent to keep the lubricity inside of the head normally. Use of the grease except these could cause trouble due to deterioration of the lubricity. Regarding how to obtain it, consult the distributor.

[Items specified by Tajima]

<table>
<thead>
<tr>
<th>Item name</th>
<th>Item No.</th>
<th>Base oil</th>
<th>Thickener</th>
</tr>
</thead>
<tbody>
<tr>
<td>KING STAR EP NO.2: 400G</td>
<td>750103004000</td>
<td>Refined mineral oil (about 75%)</td>
<td>Lithium soap (about 15%)</td>
</tr>
<tr>
<td>NIG LUBE PG: 300ML</td>
<td>750104001000</td>
<td>Olefinic synthetic oil</td>
<td>Lithium soap</td>
</tr>
<tr>
<td>NIG ACE U-2: 400G</td>
<td>750103003000</td>
<td>Refined mineral oil (about 85%)</td>
<td>Urea (about 10%)</td>
</tr>
</tbody>
</table>

Grease manufacturer: NIPPON GREASE CO., LTD.
URL: http://www.nippon-grease.co.jp/
<table>
<thead>
<tr>
<th>Greasing spot</th>
<th>Greasing cycle</th>
<th>Grease to use</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gear</td>
<td>Once/3 months</td>
<td>KING STAR EP NO.2: 400G</td>
</tr>
<tr>
<td>Roller</td>
<td>Once/3 months</td>
<td>NIG LUBE PG: 300ML</td>
</tr>
<tr>
<td>Cam</td>
<td>Once/3 months</td>
<td>NIG ACE U-2: 400G</td>
</tr>
</tbody>
</table>
### (2) ATH Cam, etc.

<table>
<thead>
<tr>
<th>Greasing spot</th>
<th>Greasing cycle</th>
<th>Grease to use</th>
</tr>
</thead>
<tbody>
<tr>
<td>ATH cam, Greasing hole of drive system</td>
<td>Once/6 months</td>
<td>KING STAR EP NO.2: 400G</td>
</tr>
</tbody>
</table>

![Diagram of ATH cam and greasing hole of drive system]
5. Inspection, Repair

### WARNING

Before inspection, be sure to turn off the original power supply. Some circuits are still applied voltage even if the original power supply was turned off. Wait until these circuits are completely out of voltage (4 minutes) and then start working.

<table>
<thead>
<tr>
<th>Inspection Point</th>
<th>Action</th>
<th>Inspection Cycle</th>
</tr>
</thead>
<tbody>
<tr>
<td>Attaching of each type of cover</td>
<td>Attach all the covers.</td>
<td></td>
</tr>
<tr>
<td>Setting condition of embroidery thread</td>
<td>Set it correctly.</td>
<td></td>
</tr>
<tr>
<td>Check breakage and/or bent of needle.</td>
<td>Replace the needle.</td>
<td>At start of working</td>
</tr>
<tr>
<td>Lubricating condition of each section</td>
<td>Lubricate.</td>
<td></td>
</tr>
<tr>
<td>Automatic lubrication system</td>
<td>Refill oil.</td>
<td></td>
</tr>
<tr>
<td>Belt tension (main shaft, X/Y drive system)</td>
<td>Consult the distributor.</td>
<td>Once/3 months</td>
</tr>
</tbody>
</table>

### WARNING

Before repairing the machine, be sure to turn off the original power supply. Some circuits are still applied voltage even if the original power supply was turned off. Wait until these circuits are completely out of voltage (4 minutes) and then start working.

If the machine needs the repair, the repair must be done only by the service personnel assigned and trained by Tajima or qualified technician. (Consult your distributor.) Do not change the specification nor modify the parts of the machine without due consultation with Tajima. Such modification may have the risk against the operational safety.

When restarting the machine after repairs, attach all covers etc. which were removed for repair operation.

### CAUTION

For the repair, use Tajima genuine parts for replacement.
Chapter 11
Appendix

1. Spec. of the machine .................................................................216
2. Function code ...........................................................................219
3. Electrical component .................................................................221
4. Terminology ...........................................................................224
1. Spec. of the machine

1-1. Power supply specifications

Since power spec. of the machine is specified clearly as shown below, use the machine under these conditions.

---

**WARNING**

⚠️ Since there is a danger of electric shock due to leak current, be sure to ground the earth cable of the machine. In addition, degree of grounding should be type D or higher (grounding resistance 100 ohms or less).

---

1. Voltage, allowable voltage range: 10% of the rated voltage
2. Power consumption (max)
   - Single head machine: 250 VA, 150 W
   - 2 or more head machine: 2.0 kVA, 1.4 kW
3. Frequency: 50/60 Hz
4. Insulation resistance: 10M ohms and larger (at 500 V Megger)

1-2. Ambient noise level

The ambient noise level of the machine is less than 85 db (single head machine: less than 82 db). Measuring environment is as the figure below.

---

(1) Measuring position
Higher value is adopted after measured at B and C. The height is measured at 1.6 m from the floor.

(2) Working condition of the machine
Fabric is stretched on the border frame, and satin stitch sewing of stitch length 4 mm is executed.

(3) RPM
The maximum number of revolutions of the machine

(4) Measuring instrument
Conformity to IEC61672-1: 2002 Class 1
1-3. Switching of input voltage (Single-head machine only)

The following label (either of one) is stuck at the lower part of the power supply card. Only the model on which label No.3 is stuck can switch input voltage.

![Label No.1: CAUTION CN11
OK 1-phase ENGLISH
Wrong](image)

Exclusive for single-phase/100 V

![Label No.3: CAUTION CN11
Input voltage of this machine:
100 V 200 V](image)

Single-phase
100 V or 200 V

However, since the setting is performed according to your voltage spec. at shipment, it is not necessary to switch input voltage in usual usage. Perform switching of input voltage only in the following condition.

- (a) When the machine was moved for installation to the place whose voltage spec. is different from that at shipment
- (b) When you replace power supply card and connection of the connector CN11 is different from your voltage spec.

1-3-1. How to switch

![DANGER: Since there could be danger of electric shock, consult your local distributor before working.](image)

Change connection of the connector CN11 on the power supply card.
1-4. Machine weight

Since it is described on the spec. plate, please check. (indicated by an arrow in the figure below)
## 2. Function code

### 2-1. Function codes that can be edited by this machine

<table>
<thead>
<tr>
<th>Function code</th>
<th>Function name</th>
<th>In case of storing design to a USB memory and selecting &quot;T&quot;, data will be converted to the following function codes.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stitch</td>
<td>Stitch</td>
<td>Stitch</td>
</tr>
<tr>
<td>Jump</td>
<td>Jump</td>
<td>Jump</td>
</tr>
<tr>
<td>Color</td>
<td>Color change</td>
<td>Stop</td>
</tr>
<tr>
<td>ATH</td>
<td>Upper/Under Thread ATH</td>
<td>Jump</td>
</tr>
<tr>
<td>Up_ATH</td>
<td>Upper Thread ATH</td>
<td></td>
</tr>
<tr>
<td>Tmp_Stop</td>
<td>Temporary Stop Stitch</td>
<td>Stop</td>
</tr>
<tr>
<td>Tmp_Stop_J</td>
<td>Temporary Stop Jump</td>
<td></td>
</tr>
<tr>
<td>Low_S</td>
<td>Low Speed Start Stitch</td>
<td>Stitch</td>
</tr>
<tr>
<td>Low_E</td>
<td>Low Speed End Stitch</td>
<td>Stitch</td>
</tr>
<tr>
<td>Low_S_J</td>
<td>Low Speed Start Jump</td>
<td>Jump</td>
</tr>
<tr>
<td>Low_E_J</td>
<td>Low Speed End Jump</td>
<td></td>
</tr>
<tr>
<td>Satin_S</td>
<td>Satin Stitch Start</td>
<td></td>
</tr>
<tr>
<td>Satin_E</td>
<td>Satin Stitch End</td>
<td>Stitch</td>
</tr>
<tr>
<td>Offset</td>
<td>Auto. Color Change Offsetting</td>
<td></td>
</tr>
<tr>
<td>Sequin_S</td>
<td>Sequin Start</td>
<td>Sequin</td>
</tr>
<tr>
<td>Sequin_E</td>
<td>Sequin End</td>
<td></td>
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<tr>
<td>Sequin_O</td>
<td>Sequin Output</td>
<td>Jump</td>
</tr>
<tr>
<td>Sequin_O_2</td>
<td>Sequin Output 2</td>
<td>Jump</td>
</tr>
<tr>
<td>Boring_S</td>
<td>Boring Start</td>
<td>Stitch</td>
</tr>
<tr>
<td>Boring_E</td>
<td>Boring End</td>
<td></td>
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<tr>
<td>AFC_Feed</td>
<td>AFC frame feed</td>
<td></td>
</tr>
<tr>
<td>End</td>
<td>End</td>
<td></td>
</tr>
</tbody>
</table>
### 2-2. Function codes that cannot be edited by this machine (display only)

<table>
<thead>
<tr>
<th>Function code</th>
<th>Function name</th>
<th>In case of storing design to a USB memory and selecting &quot;T&quot;, data will be converted to the following function codes.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Color_J</td>
<td>Color Change Jump</td>
<td>Stop</td>
</tr>
<tr>
<td>ATH_J</td>
<td>Upper/Under Thread ATH Jump</td>
<td></td>
</tr>
<tr>
<td>Up_ATH_J</td>
<td>Upper Thread ATH Jump</td>
<td></td>
</tr>
<tr>
<td>Sequin_E_J</td>
<td>Sequin End Jump</td>
<td>Sequin</td>
</tr>
<tr>
<td>Sequin_O_J</td>
<td>Sequin Output Jump</td>
<td></td>
</tr>
<tr>
<td>Boring_1_J</td>
<td>Boring 1 Jump</td>
<td></td>
</tr>
<tr>
<td>Boring_2_J</td>
<td>Boring 2 Jump</td>
<td></td>
</tr>
<tr>
<td>Boring_3_J</td>
<td>Boring 3 Jump</td>
<td></td>
</tr>
<tr>
<td>Boring_4_J</td>
<td>Boring 4 Jump</td>
<td></td>
</tr>
<tr>
<td>Boring_S_J</td>
<td>Boring Start Jump</td>
<td></td>
</tr>
<tr>
<td>Boring_E_J</td>
<td>Boring End Jump</td>
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<tr>
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<td>Looping</td>
<td>Stitch</td>
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<td>Loop_J</td>
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<td>Chain Stitch Jump</td>
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<td>Laser Power Switching</td>
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<tr>
<td>Laser_Lens</td>
<td>Laser Lens Switching</td>
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</tr>
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<td>Tape Rewinding</td>
<td></td>
</tr>
<tr>
<td>End_J</td>
<td>End Jump</td>
<td></td>
</tr>
</tbody>
</table>
3. Electrical component

3-1. Layout of electrical component, card
3-2. Electrical system diagram (Single-head machine)

The numbers in the figure accord with the numbers in the layout drawing of each cards. (p.221)
3-3. Electrical system diagram (Multi-head machine)

The numbers in the figure accord with the numbers in the layout drawing of each cards. (p.221)

*3: In case of single-side equipping of sequin (L or R)

In case of both-side equipping (LR), extension card is attached.
4. Terminology

The following terms apply to all models in common. There might be a case that it does not correspond depending on model.

**<A>**

**Absolute origin**

An anchoring point to calculate the current frame position (X: 0.0, Y: 0.0).

**ATH**

Abbreviation of Automatic Thread Trimming and Holding Device.

**Auto Jump**

To make a stitch divided into stitches of the setting value or less automatically when its stitch length exceeds the setting value. It is effective to prevent the stepping out of the frame and the displacement of the design.

**<B>**

**Backlash**

A play (gap) generated by shock at drive system and/or around the frame when a stitch returns (when frame drive is reversed). It may affect finish of sewing.

**<C>**

**Cleanup**

To remove a fine stitch included in design data to make before and after stitches absorb it. It is effective to reduce thread breakage.

**Condition data**

Embroidery condition included in design data (needle bar selection, data conversion, repeat, design start position, automatic offset).

**CT0**

File including information of needle bar selection and design start position. It is necessary to handle TBF, CT0 and DGF as a set on a personal computer.

**<D>**

**Data mode**

Storing mode of design data (T, T2, T3).

**Data set**

To input design data to the memory of the machine to start the machine.

**D-axis**

Driving shaft to rotate sewing needle or nipple (TCMX series).

**DGF**

File that indicates design image. It is necessary to handle TBF, CT0 and DGF as a set on a personal computer.

**Driver**

Control card to make the frame or main shaft drive. X-axis driver, Y-axis driver, main shaft driver etc. are included.

**DST**

Stitch data of Tajima ternary format. Data storing mode is T.

**<E>**

**Excitation**

To keep frame motor drive. It is not possible to move the frame by hand during excitation.

**<F>**

**Fine stitch**

Short stitch such as it causes thread breakage. Stitch of which stitch length is 0.5 mm or less.

**Fixed pitch movement**

Horizontal frame travel to the neighboring head by head interval.

**Fixed position**

Angle of the main shaft at which the main shaft motor stops (stop position).

**Frame Back**

To move the embroidery frame only to the returning direction of stitches with the needle bar(s) stopped.
Frame coordinates
Frame position in embroidery space. It is indicated such as "X: -153.2, Y: +120.4".

Frame Forward
To move the embroidery frame only to the advancing direction of stitches with the needle bar(s) stopped.

Frame Limit
Limit position that the frame can move (it is indicated by mark-off line on the table).

Frame origin
An anchoring point to calculate the current frame position (X: 0.0, Y: 0.0).

Frame stepping
To move the embroidery frame only with the main shaft of the machine kept stopped during embroidery.

Function code
Command code that controls general movements of the machine. All design data consists of function codes (Stitch, Jump, Color, etc.).

Jump
To make only the frame move in the state that needle bar does not move down during operation. It is possible to make a longer stitch than one stitch of the maximum length.

M-axis
Drive shaft to rotate nipple or bobbin (TLMX series).

Offset start position
A frame travel start position set by operation of automatic offset. A position to make the machine stand by to facilitate changing of frame and/or fabric by moving the frame to the front automatically in the middle of sewing or at the end of sewing.

Parameter
Setting item that decides working condition of the machine.

Pseudo-fixed position (stop at the lower dead point)
To stop the machine with needle stuck in cloth at end of embroidery. Moving the frame in this condition will enable consecutive embroidery.

Inching
Movement to stabilize start of sewing by moving needle bar slowly before the main shaft starts usual operation. It is executed before thread trimming to stabilize thread trimming.

Return Stitches
Tie stitch to be executed at start of sewing (stitch to prevent mis-stitching at start).

Running stitch
Decorative stitch of straight line or curved line only.
Terminology

<S>
Satin stitch
Repeated zigzag stitches. It is mainly used for hem of applique, logo, mark, flower design etc.

Sequin needle
Needle that sews sequins in sequin device. It indicates the first needle or the last needle.

SideKick
Name of network application software manufactured by Pulse Microsystems Ltd.
This software can input the design data into the machine memory by wireless LAN as a main function.

Step
The section divided by color change code in the design data. The first section is called step 1, and the next section is called step 2.

<T>
Table offset
To move the frame to the rear direction temporarily to facilitate threading. It is mainly effective when the frame is positioned at table cut section.

Tatami stitch
Stitch to be filled in a certain amount of area. It is mainly used for big logo, background, underlay etc.

TBF
Stitch data of Tajima binary format. Data storing mode is T2. It can correspond much more function codes compared with DST. It is necessary to handle TBF, CT0 and DGF as a set on a personal computer.

TCF
Data integrating TBF, CT0 and DGF. Integration facilitates handling of design data. Data storing mode is T3.

Tie Stitches
Tie stitch to be executed before thread trimming (stitch to prevent fray).

<W>
Weak brake (Main shaft motor brake)
To fix the main shaft by brake of the main shaft motor so that the main shaft does not rotate when it stops.

<X>
X-axis drive system
Drive system to make the embroidery frame move in crosswise (X) direction.

X data
Data to make the embroidery frame move in crosswise (X) direction. It is indicated by moving direction (code: +/-) and value (mm).

<Y>
Y-axis drive system
Drive system to make the embroidery frame move in lengthwise (Y) direction.

Y data
Data to make the embroidery frame move in lengthwise (Y) direction. It is indicated by moving direction (code: +/-) and value (mm).

<Z>
Z-axis
Driving shaft to change needle height (TCMX series).

Zigzag cord needle
Needle that sews cord in zigzag cording device. It indicates the first needle or the last needle.
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<th>Page</th>
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</thead>
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<tr>
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<td>Bar switch</td>
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<td>Frame Travel Speed</td>
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<td>Frame Type</td>
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