TTM-2002-1018
5-31-02

USER'S MANUAL

TMFXV SERIES

TAJIMA

M-JX09-E
(2002.06)

FOREWORD

This User's Manual contains information useful for operating TAJIMA Automatic Embroidery Machine, Model TMFXV, TMFXV-C, and TMFXV-IIC (to be collectively referred to as machine in this manual). Persons who touch a machine for the first time, as well as those who are experienced in the machine operation, will find this manual helpful for understanding and performing the machine operation procedures. Please read through this manual and understand the contents before operating the machine.

The contents of this manual are largely divided into the following sections.

[IMPORTANT WARNING ITEMS FOR SAFE OPERATION]
[MACHINE CONSTRUCTION]
[OPERATION BASICS]
[DATA OPERATION]
[MACHINE OPERATION]
[MACHINE SETTING]
[SETTING ON EMBROIDERY]
[SETTING ON OPTIONS]
[OUTLINE OF FUNCTIONS]
[TROUBLESHOOTING AND MAINTENANCE]
[APPENDIX]

Concerning optional devices, please refer to the instruction manual of the optional device you have purchased.

This manual may contain discrepancies in detailed information when compared with the actual machine due to continued research and improvements. If any question about the machine contents of this manual arises, please consult your TAJIMA distributor.

Always keep this manual at hand.

IMPORTANT SAFETY INSTRUCTIONS

Operation of this machine requires correct operation and appropriate maintenance to ensure safety. Please read the IMPORTANT SAFETY INSTRUCTIONS in this manual carefully and do not attempt operation or maintenance of the machine before you thoroughly understand the items written under IMPORTANT SAFETY INSTRUCTIONS.

Items that require your special attention on operation and maintenance of the machine are specified below with the warning symbol and signal word. These items must be strictly observed to ensure safety during operation and maintenance.

Signal word definition is given below.

⚠ DANGER

Indicates that there is a lot of danger of death or serious injuries [* 1] if the instruction is not observed.

⚠ WARNING

Indicates that there is a likelihood of death or serious injuries [* 1] if the instruction is not observed.

⚠ CAUTION

Indicates a potentially hazardous situation which, if not avoided, may result in minor or moderate injury [* 2] or property damage.

*** 1 : A condition caused by electric shock, injury, fracture of a bone, etc., that leads to sequelae, 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.**

: Prohibited items

:Items that must be followed carefully to ensure safe operation.

The information which gives details or supplements the explanation appears under the title **NOTE**.

(FD06)

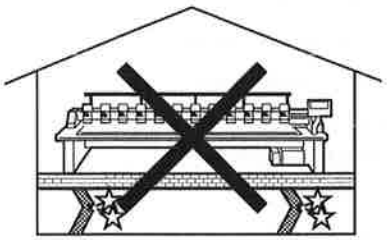
IMPORTANT WARNING ITEMS FOR SAFE OPERATION

1. MACHINE INSTALLATION ENVIRONMENT

⚠ CAUTION

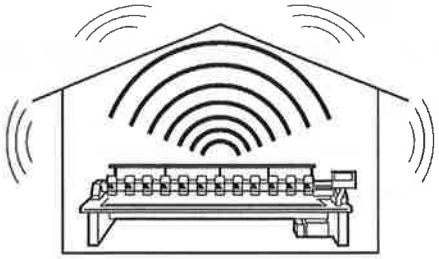
- **Install the machine on a sturdy floor.**

  The floor structure must be strong enough to bear the machine weight (indicated on the spec. plate). If the floor is supported by steel frames, place the machine stand on the steel beams as long as possible.



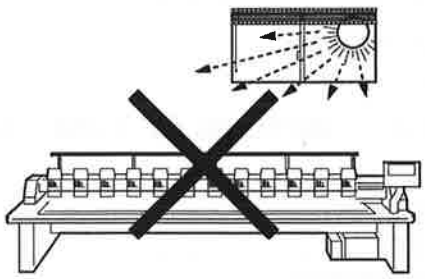
- **Prevent the operation noise in the environment.**

  To improve the sound insulation performance of the factory in addition to the operation with reduced noise of this machine, use the interior finish materials which show high sound insulating performance for the walls, ceiling, and floor of the factory.



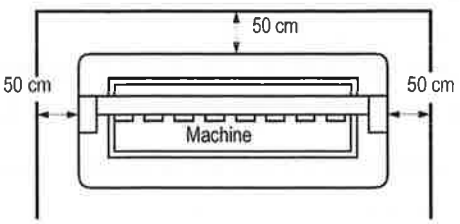
- **Avoid direct sunlight.**

  If the machine is exposed to direct sunlight over an extended period, 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.**

  For the maintenance purpose, provide at least 50 cm clearance around the machine (at the right, left, and back sides of the machine).



⚠ CAUTION

- **Avoid dust and moisture.**

  Dust and moisture lead to dirt and rust on the machine. Install air conditioning equipment, and periodically clean the working area.

  Use caution not to expose the machine to direct wind from the air conditioner so that the 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)

2. CAUTIONS ON MACHINE OPERATION

⚠ CAUTION

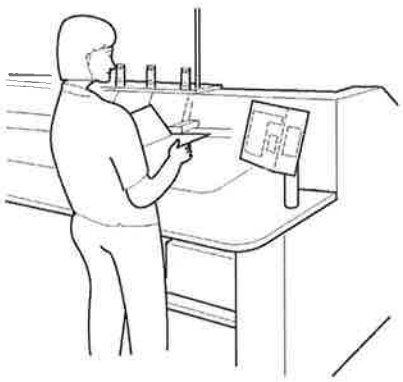
For long life machine operation, operate the machine with about 70% of the maximum speed as "operation for total fitting" for about one month after installation. By performing operation for total fitting, life of the machine will become longer, which will be useful to avoid unexpected troubles.

⚠ WARNING

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

<Before Starting the Machine>

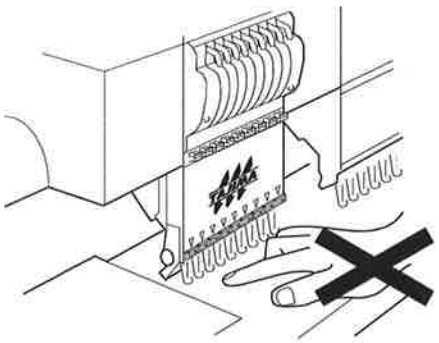
- **The machine is designed and built for industrial use.**
- **The machine is designed and built as an industrial embroidery machine for semi- or final textile products and similar materials. Using the machine for other purposes must be avoided.**
- **Use the machine in the environment where only authorized persons are permitted to enter, so that unauthorized persons will not manipulate the machine. Especially, sufficient care must be exercised so that a child will not enter the area near 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.**
- **Do not stand on the machine. Using the bar switch as a grip to support yourself is strictly prohibited.**
- **Insert the power cable plug fully. If a metallic part touches a blade in the plug, it may cause fire and/or electric shock.**
- **Do not damage, modify or heat the power and other cables. Do not exert undue force to them, either. Otherwise the cables will be damaged causing fire and electric shock.**
- **Read this manual and thoroughly understand the contents of operation before starting 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 more than one operator are working together, make sure that no one is working near the moving parts of the machine before starting the machine.**
- **<During the Machine Operation>**
- **Keep away control units such as the power supply box and the controller box (operation panel box) from water and chemicals. Entry or splashing of them into control units leads to short circuits of internal circuits, causing fire, electric shock and other troubles.**
- **If water or other chemicals enter a control unit, shut off the power at the primary power source and contact your Tajima distributor.**
- **Be sure to turn off the power switch of the machine before turning off the primary power source.**
- **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 put your hands or face near the moving parts of the machine.**
- **Especially, the areas near moving needles, rotary hooks, take-up levers, pulleys, and speed reducing box are very dangerous.**



- **Do not remove the covers for the shaft and the pulleys when the machine is running. Do not run the machine without the covers.**

<During Machine Adjustments>

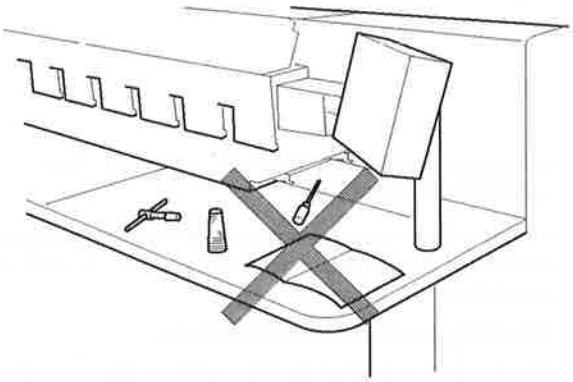
- **Turn off the primary power source before opening the electrical boxes. Be sure to turn off the power switch of the machine before turning off the primary power source.**
- **Stop the machine before carrying out work near the needles such as threading the needle and checking the finish of embroidery.**
- **Shut off the power supply by turning off the power switch before manually rotating the main shaft of the machine.**

⚠ CAUTION

<Before starting the machine>

When operating the machine, always observe the following items to prevent machine or property damage.

- **Do not put things on the table.**



- **Do not use bent needles or those that do not fit the materials.**
- **After the completion of work, shut off the power source by turning off the switch of the power distribution panel.**

  Be sure to turn off the power switch of the machine before turning off the power source.

3. WARNING LABELS AND SPEC. PLATE

[IMPORTANT]

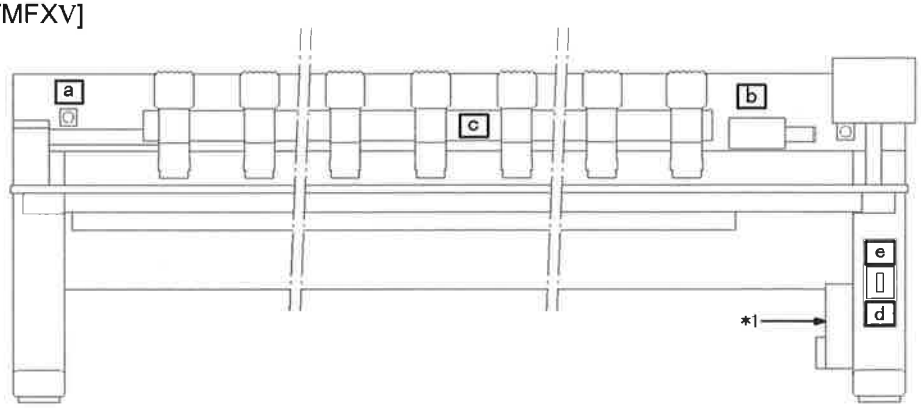
The machine has warning labels that bear instructions for safe operation. Machine operators must follow the instructions shown on the warning labels.

Do not detach these labels, nor make them illegible by painting, etc.

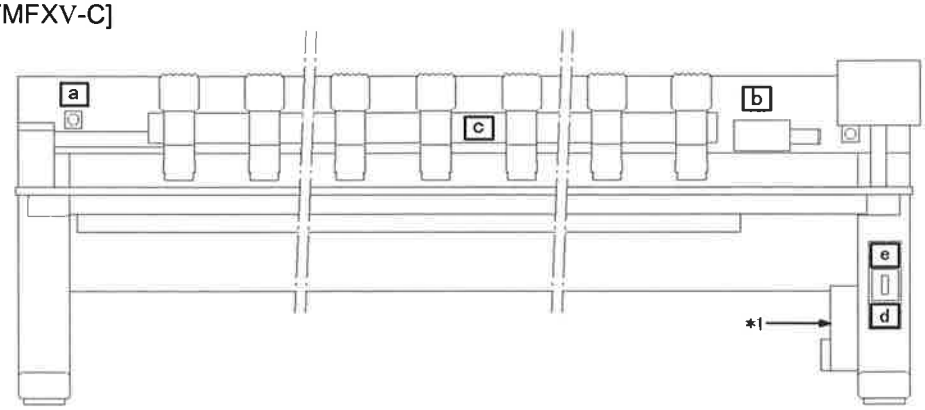
NOTE : If a warning label is missed or damaged, please contact your TAJIMA distributor.

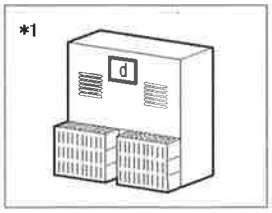
3-1. Positions of Warning Labels and Spec. Plate

[TMFXV]

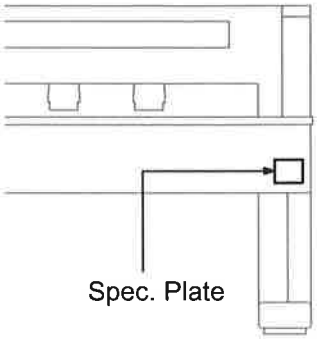


[TMFXV-C]

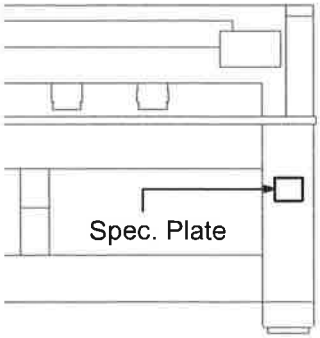




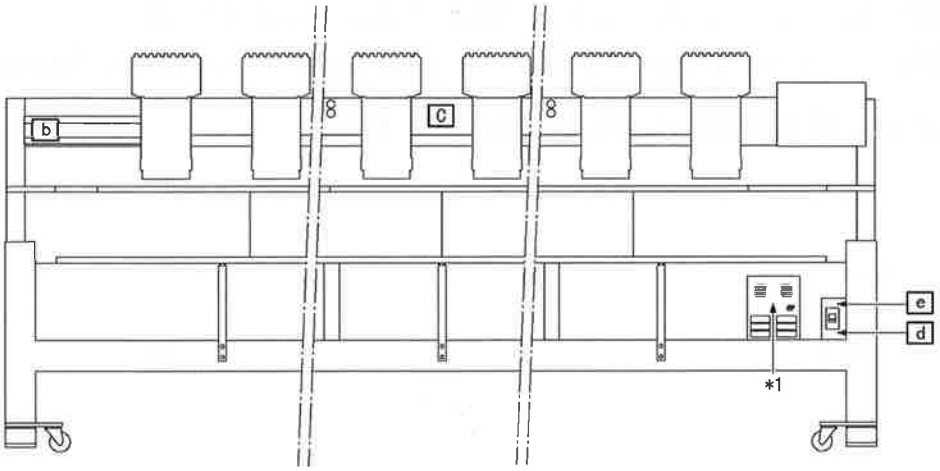
[TMFXV]

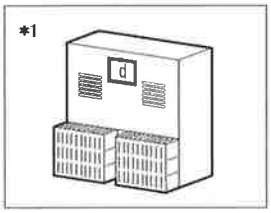


[TMFXV-C]

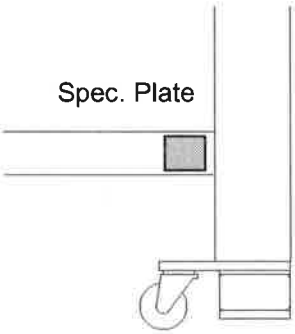


[TMFXV-IIC]





[TMFXV-IIC]

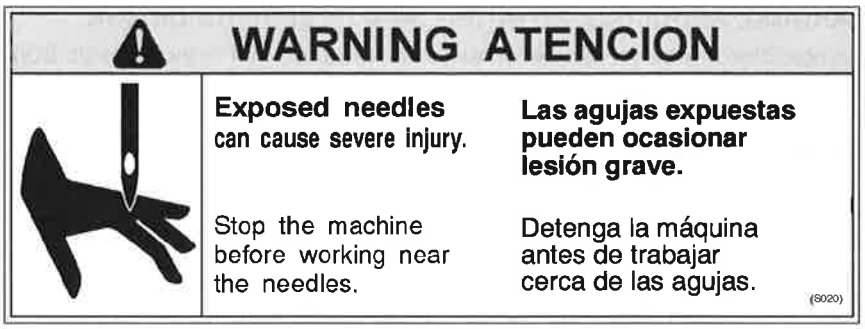


3-2. Contents of Warning Labels

(a)

NOTE : The term "safety cover" used in the safety labels (a) and (c) refer to all covers installed near movable units of the machine.

(b)



(c)

(d)

HIGH VOLTAGE

Can cause shock, burn, or death.

- **The cover can be opened only by the service persons authorized by Tajima.**
- **When opening the cover, turn the power switch OFF and wait at least 4 minutes.**

(e)

CHAPTER 1 MACHINE CONSTRUCTION

1. FEATURES AND FUNCTIONS

- **QUIET OPERATION**
  Variety of noise-reduction mechanism keeps working environment comfortable.
- **TRACE FUNCTION**
  The function checks if the design fits in the frame to be used before starting embroidery.
- **MEMORY CAPACITY**
  The standard 1,140,000-stitch memory can store up to 99 designs.
- **TAKE-UP LEVER GUARD**
  The take-up lever guard makes thread behavior more stable and prevents entangling and coming-off of thread.
- **ENLARGING, REDUCING, ROTATING, AND REVERSING DESIGN**
  The embroidered design can be enlarged or reduced in 1% increments from 50% to 200%. The design can be rotated in 1° increments.
- **AUTOMATIC REPEAT**
  By inputting the number of times the design should be repeated, the same design can be repeated up to 99 times in the X-axis and Y-axis direction independently.
- **BUILT-IN FLOPPY DISK DRIVE**
  A single 2DD floppy disk can store 111 designs with approximately 240,000 stitches. alternatively, a 2HD floppy disk can hold 223 designs with approximately 480,000 stitches.
- **SATIN STITCH**
  Stitch width can be expanded in 0.1 to 1.0 mm range wider than the design data.
- **DESIGN DATA EDITING**
  The design data can be edited (modified, inserted, erased, cleaned up) in 1-stitch units.
- **FRAME BACK**
  The embroidery frame can be traveled back in 1-stitch units or stop code units.
- **ORIGIN RETURN**
  A return to the design start point can be made during embroidery operation, even if the design start point does not coincide with the design end point.
- **AUTOMATIC THREAD TRIMMING AND HOLDING DEVICE <ATH>**
  This function can automatically trim threads according to the design data commands. In manual operation, this function can trim threads as desired.
- **POWER FAILURE MEASURES**
  No displacement of the design occurs when power is restored after power failure, preventing loss of merchandise.
- **AUTOMATIC/MANUAL OFFSET**
  The frame moves aside so that applique placement, frame changing, etc. can be done easily. The frame can be easily returned to the original position after such operations are completed (automatic offset). Even after the frame has been moved manually during embroidering, the frame can be easily returned to the previous stitch point (manual offset).
- **STANDBY DATA INPUT**
  By keeping the standby mode, it is possible to input design data for data setting from an external device such as DG/ML, etc. without intervening operation at the operation panel.

2. ELECTRICAL SPECIFICATIONS

The following indicates the electrical specifications of the machines.
Please operate your machine under the environments that satisfy these specifications.

⚠ CAUTION

Usage deviated from conditions shown below may cause operation failure of the machine.

<Power Supply>

- Voltage/Allowable voltage fluctuation ..... 10% of the rated voltage
- Frequency..... 50/60 Hz
- Power supply capacity and power consumption..... 3.0 kVA 1.9 kW

<Insulation Resistance>

10M ohms or greater (measured with a 500 V insulation tester)

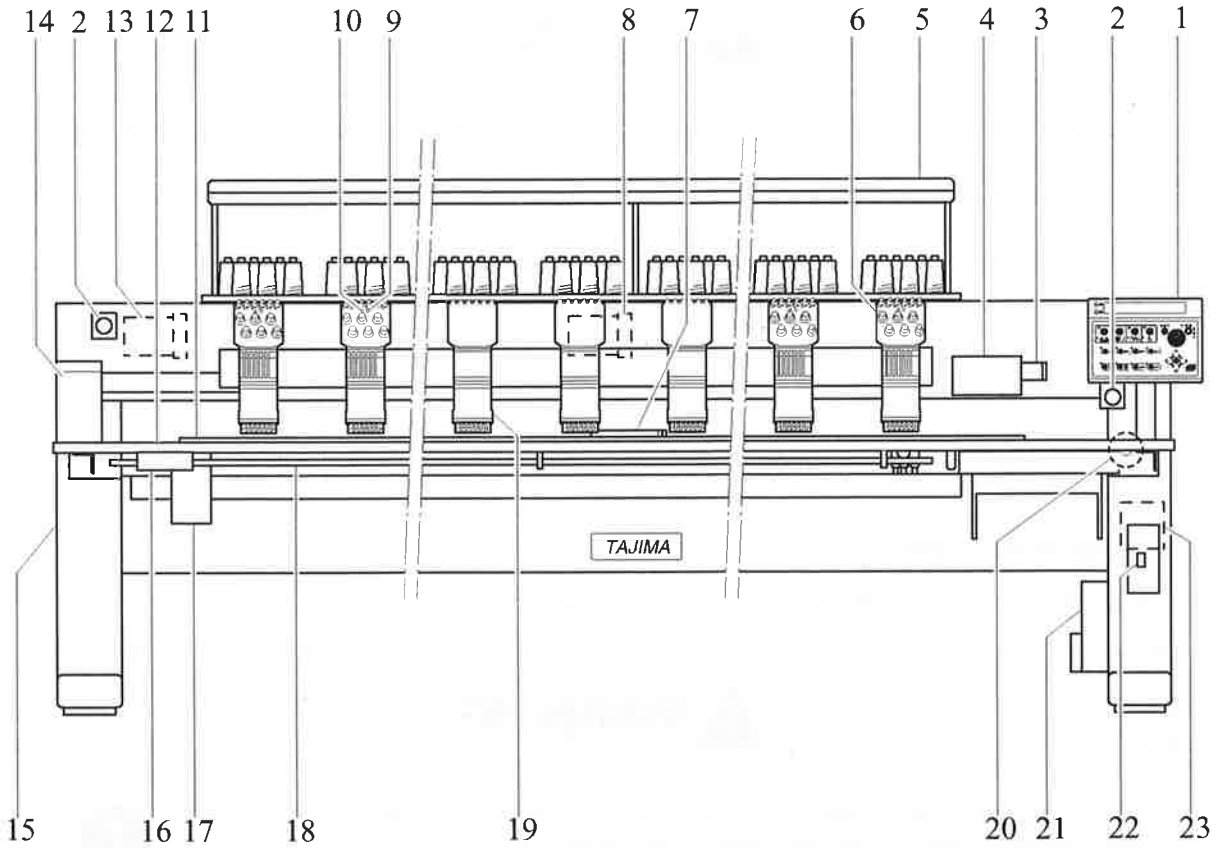
⚠ WARNING

To avoid the danger of electric shock due to leak current, be sure to connect the grounding wire of the machine to the ground.

Grounding resistance must be 100 ohms or less.

3. NAMES OF PARTS

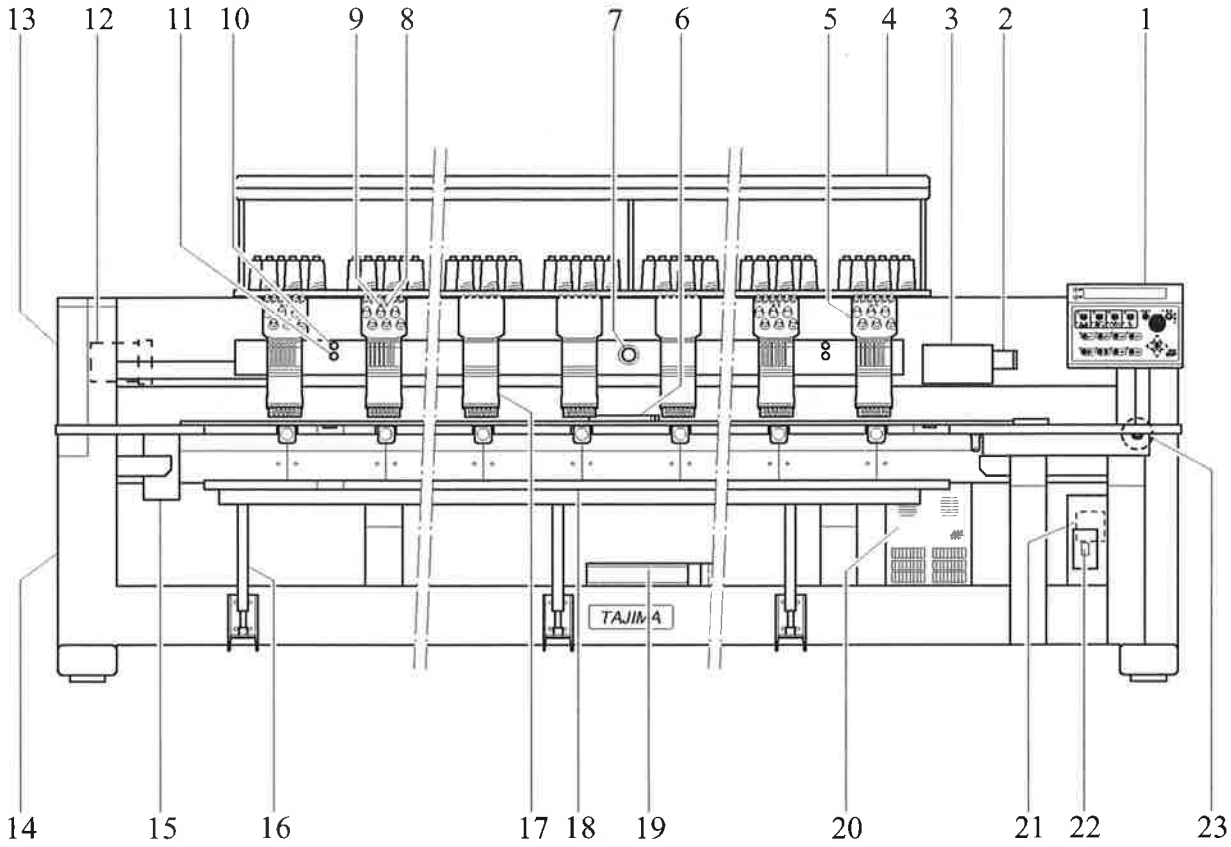
3-1. TMFXV



1	Controller box	13	Main shaft motor (*1)
2	Emergency stop switch	14	Rotary hook shaft transmission box
3	Color change motor	15	Stand
4	Color change box	16	Bar switch box
5	Thread guide system	17	Thread trimming cam box
6	Individual tension base	18	Bar switch
7	Y-axis pulse motor	19	Needle bar case
8	Main shaft motor (*1)	20	X-axis pulse motor
9	Tension base switch	21	Power supply/Driver box
10	Thread breakage indicator lamp	22	Power switch
11	Embroidery frame	23	Inverter
12	Machine table		

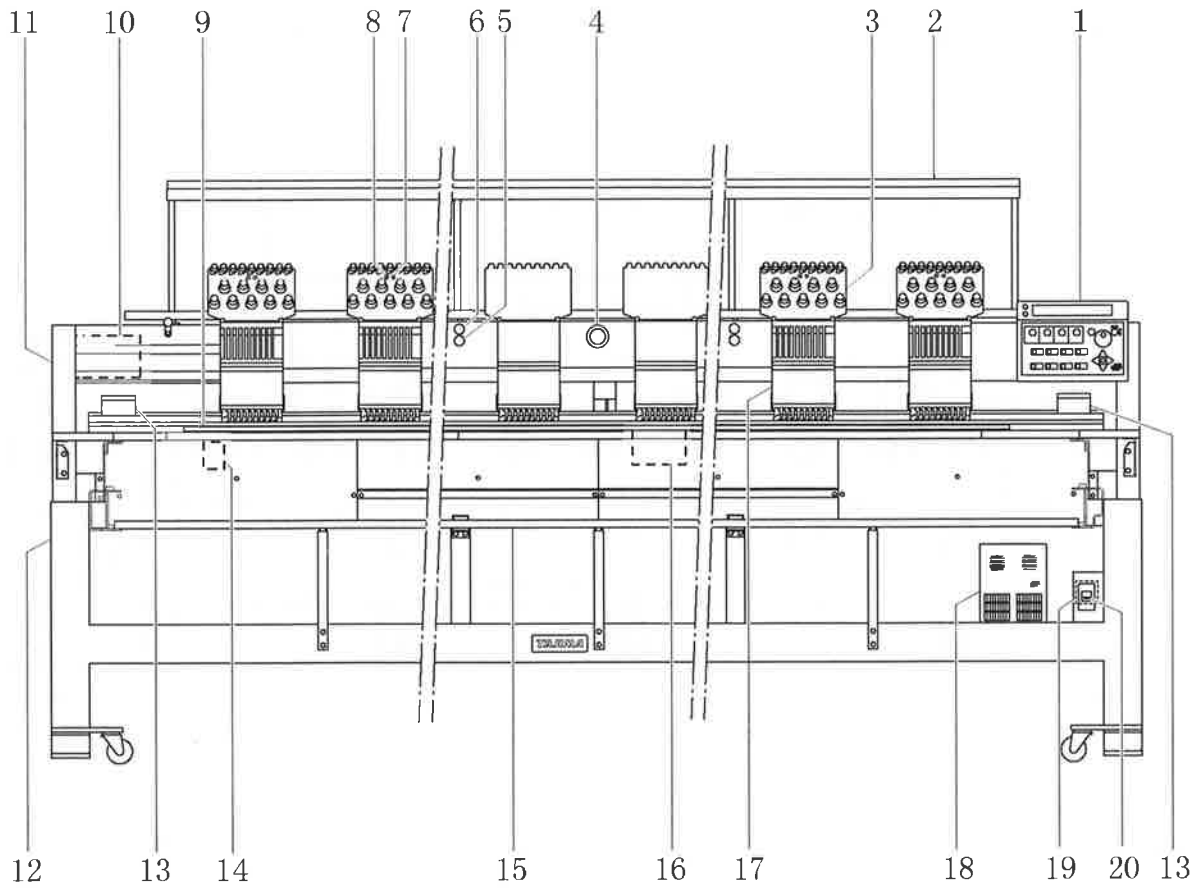
*** 1 : The mounting position of the main shaft motor differs depending on the machine specifications (either at 8 or 13).**

3-2. TMFXV-C



1	Controller box	13	Left-end Box
2	Color change motor	14	Stand
3	Color change box	15	Thread trimming cam box
4	Thread guide system	16	Hydraulic cylinder
5	Individual tension base	17	Needle bar case
6	Y-axis pulse motor	18	Machine table
7	Emergency stop switch	19	Hydraulic pump
8	Tension base switch	20	Power supply/Driver box
9	Thread breakage indicator lamp	21	Inverter
10	Stop switch	22	Power switch
11	Start switch	23	X-axis pulse motor
12	Main shaft motor		

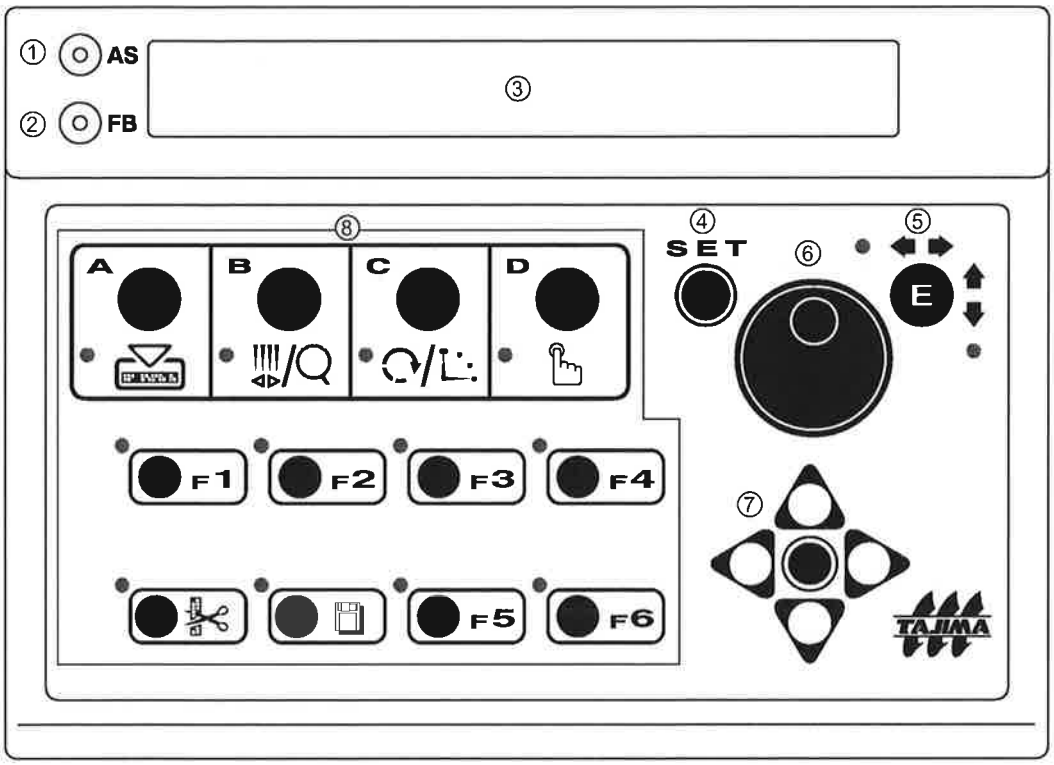
3-3. TMFXV-IIC



1	Controller box	11	Left-end Box
2	Thread guide system	12	Stand
3	Individual tension base	13	X-axis pulse motor
4	Emergency stop switch	14	Thread trimming cam box
5	Start switch	15	Machine table
6	Stop switch	16	Y-axis pulse motor
7	Tension base switch	17	Needle bar case
8	Thread breakage indicator lamp	18	Power supply/Driver box
9	Embroidery frame	19	Inverter
10	Main shaft motor	20	Power switch

4. OPERATION PANEL BOX

4-1. Explanation and Function of Each Part



① Automatic/manual start setting indicator lamp
Lit: Automatic
Unlit: Manual

② Frame back/forward setting indicator lamp
Lit: Back
Unlit: Forward

③ Display screen
The screen displays guide messages for setting the data and the present settings.

④ SET key
Press this key after inputting each setting item or when selecting a setting item.

NOTE : This key is also used as the reset key when an error code number is displayed.

⑤ Manual frame travel mode key
Press this key to switch to the manual frame travel mode and use jog dial to travel the frame manually. To exit the manual frame mode, press any operation key.

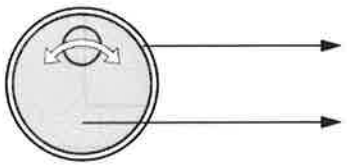
NOTE 1: For details, refer to p.4-11.

NOTE 2: By using this key while in the parameter setting mode, the input value can be reset to the previous set value and the display mode can be returned to the "Normal Display".

⑥ Jog dial/shuttle

The jog dial/jog shuttle provide the following two functions.

- Selection of an input value



Jog shuttle (outside): Fast feed of an input value

Jog dial (inside): Selection of an input value in increments of "1" of input unit digit

Example of input value selection (selection range: 0 to 5)

When turned clockwise: → 0 → 1 → 2 → 3 → 4 → 5

When turned counterclock-wise: → 0 ← 1 ← 2 ← 3 ← 4 ← 5

- Manual feed of an embroidery frame

NOTE : For details, refer to p.4-11.

⑦ Manual frame travel keys

Used for manually moving the embroidery frame.

NOTE : For details, refer to p.4-10.

⑧ Setting keys

Used to call a variety of functions and operations.

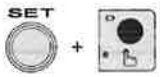
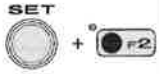
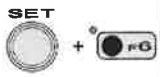
4-2. Functions of Setting Keys

The table below shows the functions and operations which are called using the setting keys on the operation panel. These functions and operations are described in details in CHAPTER 3 to CHAPTER 7.

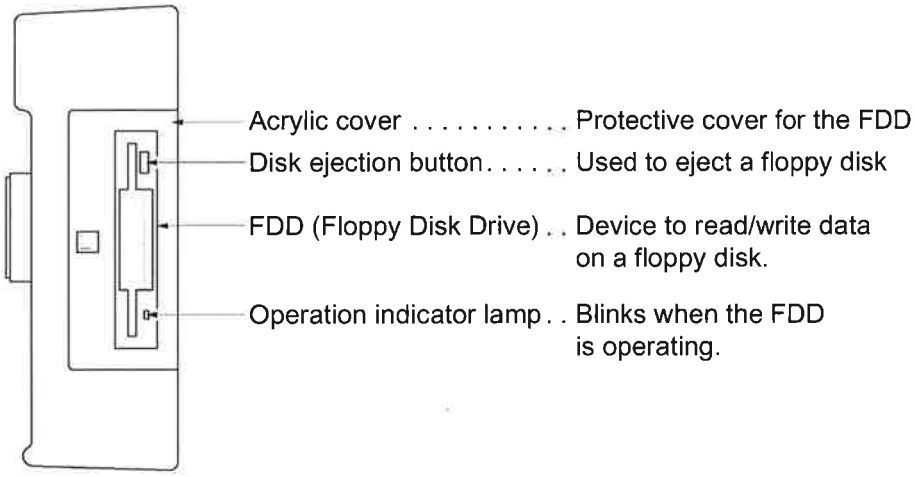
Menu Key	Screen No.	Function	Page
	1	Data Input (Memory) Operation	p.3-1
	2	Data Input (Floppy Disk) Operation	p.3-3
	4	Data Input (Serial) Operation	p.3-5
	5	Memory Delete Operation	p.3-7
	6	Standby Data Input	p.3-11
	1	Automatic Color Change / Automatic Start	p.6-6
	2	Needle Bar Selection	p.6-8
	3	Data Conversion	p.6-26
	4	Repeat	p.6-14
	5	Automatic Offset	p.6-18
	1	Maximum RPM	p.5-1
	2	Total Stitch counter / Design Timer	p.4-18
	3	Frame Back/Forward Operation in Stop Code Units	p.4-12
		Frame Back / Forward	p.5-14
	4	Automatic Origin Return	p.6-23
	6	Confirmation of Remaining Stitches for Lubrication	p.4-19
	1	Manual Color Change	p.4-1
	2	Manual Thread Trimming	p.4-3
	3	Manual Origin Return	p.4-4
	4	Manual Offset	p.4-5
	5	Trace	p.4-6
	6	Manual Lubrication	p.4-7

4-2-1. Functions of Function Keys

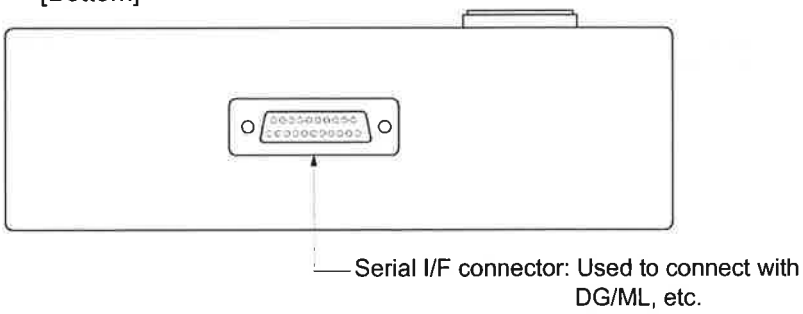
Function Key	Screen No.	Function	Page
	1	Jump Conversion	p.6-29
	2	Automatic Jump	p.6-31
	3	Satin Stitch	p.6-32
	4	All Head Sewing Start after Frame Back	p.6-24
	5	Software Frame Limit	p.5-16

Function Key	Screen No.	Function	Page
	1	Low Speed RPM	p.5-3
	2	Number of Start Inching Times	p.5-7
	4	Frame Travel Speed	p.5-11
	5	Upper Thread Breakage Detection	p.6-1
	1	Automatic Thread Trimming	p.6-3
	2	Under Thread Breakage Detection	p.7-1
	3	Auto Sub-table Lifter (TMFXV-C)	p.7-3
	4	Boring Device	p.7-4
	6	Cording Device	p.7-6
	8	Automatic Lubrication System	p.7-7
	9	Bobbin Changer	p.7-9
	1	Network	p.7-10
	-	Not used	-
	1	Auto Sub-table Lifter (TMFXV-C)	p.4-8
	1	Data Edit (Modify)	p.3-15
	2	Data Edit (Insert)	p.3-21
	3	Data Edit (Delete)	p.3-27
	4	Data Edit (Cleanup)	p.3-32
	1	Floppy Disk Processing (Save)	p.3-34
	2	Floppy Disk Processing (Delete)	p.3-38
	3	Floppy Disk Processing (Format)	p.3-40
	-	Confirmation Mode	p.4-20
	1	Max. RPM Limit	p.5-5
	2	Frame Drive Start Timing	p.5-9
	1	Power Resume	p.4-16
	2	Frame Limit Origin Memory	p.4-15

[Right Side]



[Bottom]



⚠ CAUTION

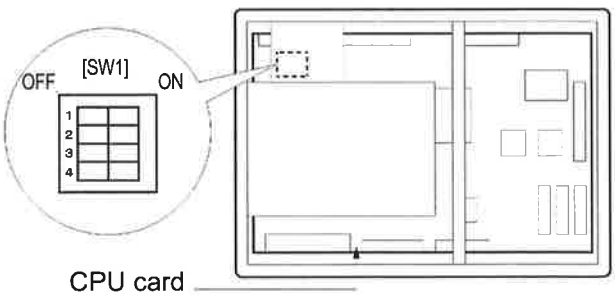
When changing settings for dip switches, be sure to turn OFF the power.
The new settings become valid when the power switch is turned ON next.

NOTE : For communications through the serial interface, 38,400 bps is set as the initial value for communication speed. If communication speed other than 38,400 bps is desired, set the DIP switch (SW1) on the CPU card according to the desired speed. For the DIP switch setting procedure, please contact TAJIMA's distributor.

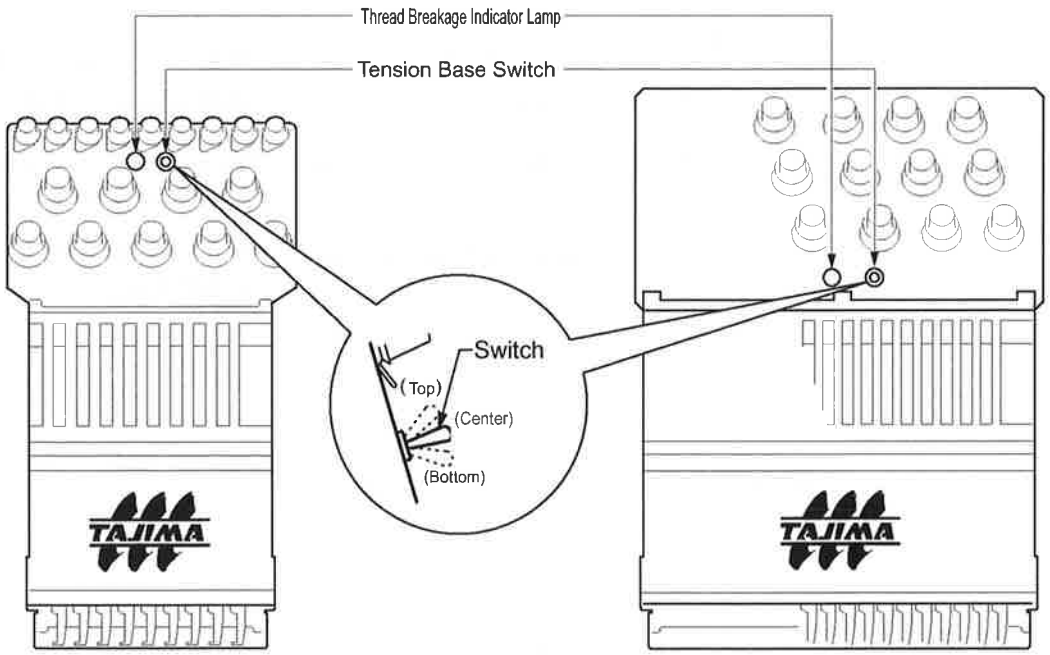
SW1-1	SW1-2	Communication speed
OFF	OFF	9,600 bps
ON	OFF	19,200 bps
OFF	ON	9,600 bps
ON	ON	38,400 bps

NOTE : SW1-3 and SW1-4 must always be OFF.

[Rear of the Controller]



5. TENSION BASE SWITCH AND THREAD BREAKAGE INDICATOR LAMP



<Function of the Tension Base Switch>

- [Center] position (normal operation)
  During normal embroidering operation, the switch must be kept in the "center" position.

  If the machine stops due to the detection of thread breakage, travel the frame back to the thread broken position then restart the machine and embroidery restarts from the position where the machine is restarted.

  NOTE : To start embroidery from the position where the frame has traveled back in status without detection of thread breakage, push the tension base switch up to the "top" position once and release it. The return spring automatically returns the switch to the "center" position when the switch is released.

- [Bottom] position (holding needle bars)
  When the switch is pushed down to the "bottom" position, the needle bar in the head does not move. (Embroidery is not performed.)

<Function of the Thread Breakage Indicator Lamp>

- During normal operation ..... Green (lit)
- When upper thread breakage is detected..... Red (lit)
- When under thread breakage is detected..... Red (blinking) (*1)

  * 1 : When UTC (Under thread controller: option) is installed.

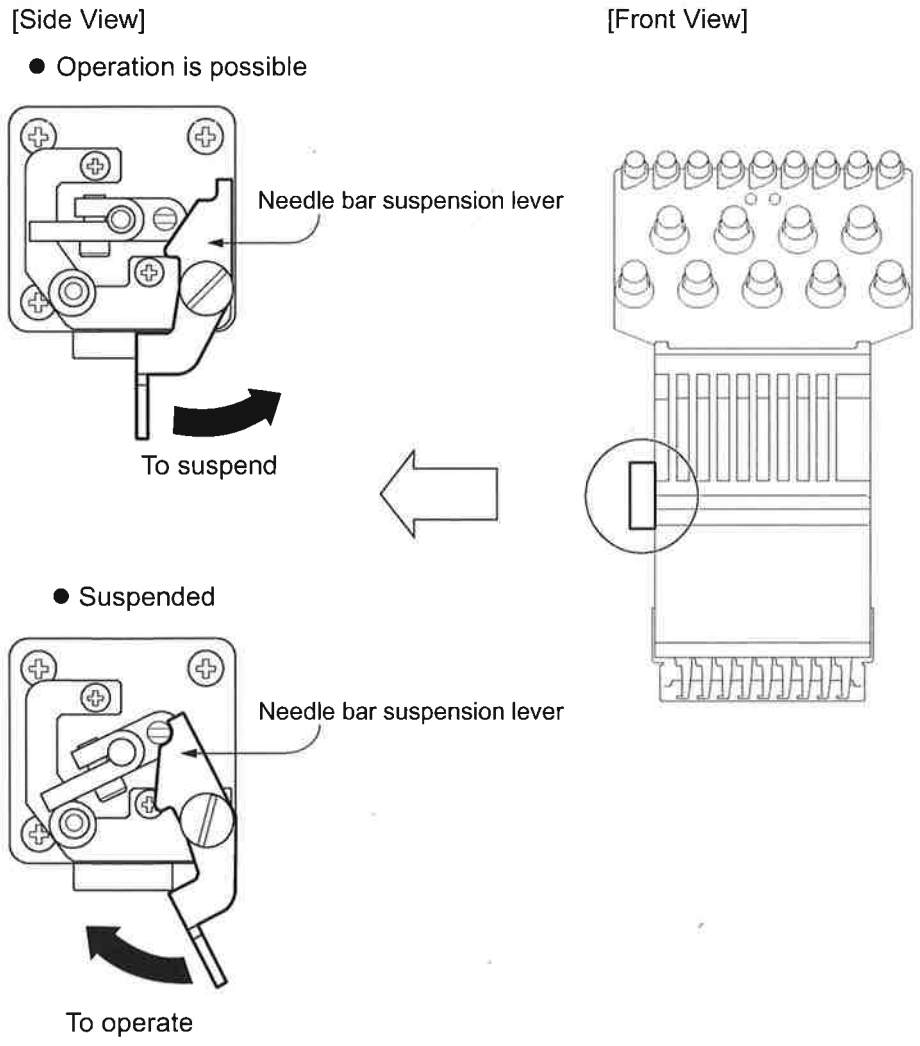
6. NEEDLE BAR SUSPENSION LEVER

This lever mechanically switches status of the needle bars from suspension to operation and vice versa.

⚠ WARNING

Do not change threads during machine operation.

Even if you suspend needle bars by operating the needle bar suspension lever, take-up levers and automatic thread trimming device will activate and you may be injured.



7. POWER SUPPLY / DRIVER BOX

7-1. Explanation of the Power Supply / Driver Box

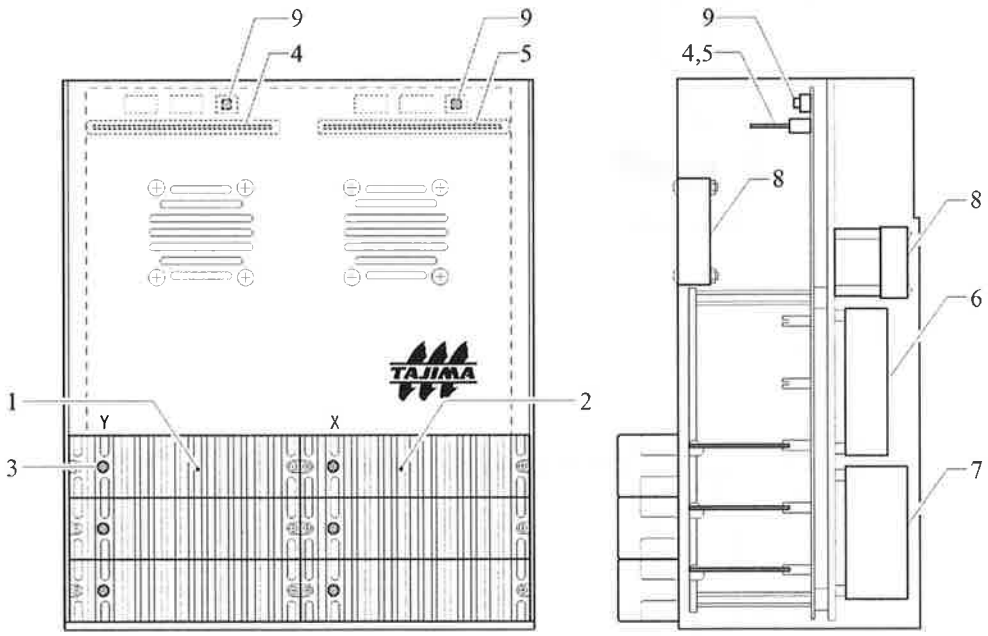
⚠ WARNING

To protect yourself from electric shock, use a bar of non-conductive material to operate the excitation ON/OFF switch.

⚠ CAUTION

Do not block wind flow of cooling fans.

If the cooling wind flow is blocked, devices in the power supply box are overheated, causing machine malfunction.



1	Y-axis driver: 3 driver cards (LED mounted on each card)	5	Driver CPU card (For X-axis driver)
2	X-axis driver: 3 driver cards (LED mounted on each card)	6	Power supply card (5V)
3	LED Indicator LEDs of driver status Green: Excitation ON (normal) Orange: Excitation OFF Red: Abnormal (overcurrent)	7	Power supply card (24V)
		8	Cooling fan
4	Driver CPU card (For Y-axis driver)	9	Excitation ON / OFF switch Excitation is turned on and off alternately each time the switch is pressed.

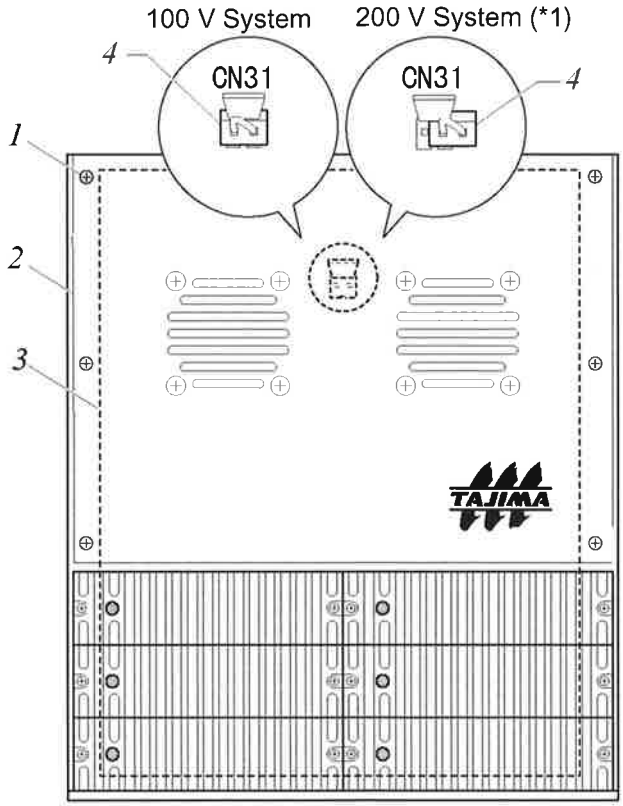
(FD06)

7-2. Switching the Power Supply Specifications (100 V System/200 V System)

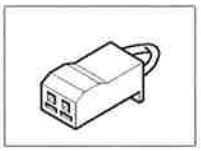
It is possible to change the power supply specifications by changing the connecting method of the short connector in the power supply / driver box.

⚠ WARNING

To avoid electric shock, be sure to turn OFF the primary power supply. (Before turning off the primary power supply, turn OFF the power switch.



After removing the front cover (2) by removing the attaching screws (1) (six positions), change the connecting method of the short connector CN31A (4) attached to the connector CN31 that is mounted on the mother board (3).



Short connector CN31A

*1: Move the short connector CN31A (4) to be attached.

CHAPTER 2 OPERATION BASICS

1. STARTING AND STOPPING THE MACHINE

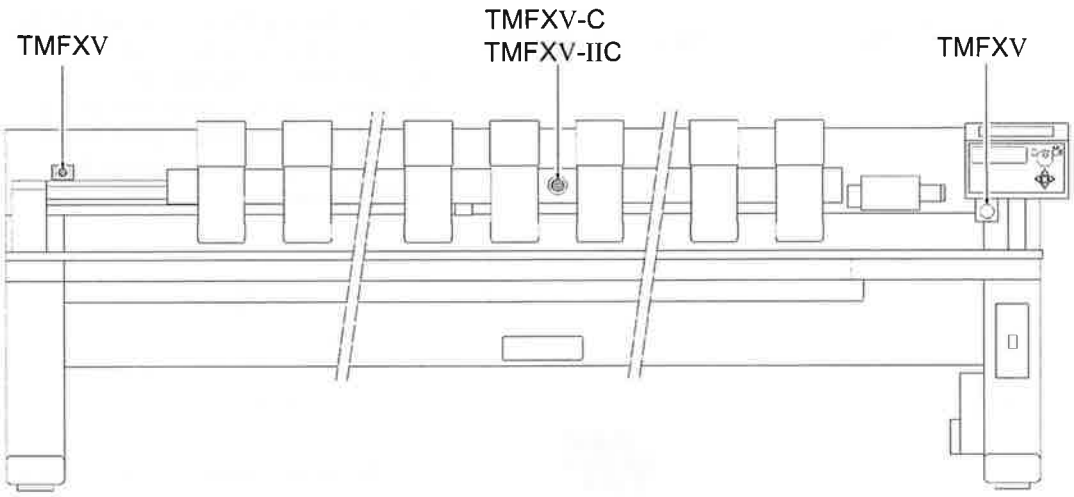
1-1. Power Switch

The power switch is provided at the front of the right side stand (TMFXV) or electrical component parts box (TMFXV-C, TMFXV-IIC) (p.1-3 - 1-5).

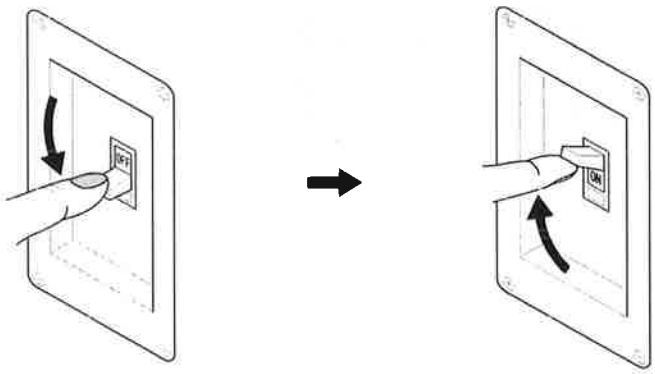
1-2. Emergency Stop Switch

Use the emergency stop switch to stop the machine in an emergency.

NOTE : If the machine is stopped during embroidery by pressing the emergency stop switch, code No. "2E3" is displayed when the power switch is turned ON next. To continue embroidery, perform the "Power Resume" operation (see page p.4-16).



NOTE : To turn on the power after it has been turned off by the pressing of the emergency stop switch, push down the power switch to the OFF position once then push it back up to the ON position.



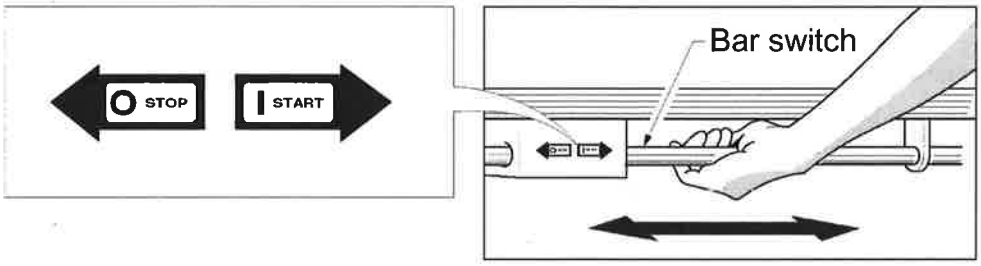
NOTE : For the position of the power switch, refer to p.1-3, p.1-5.

1-3. Operation by Bar Switch (TMFXV), Start/Stop Switch (TMFXV-C, TMFXV-IIC)

⚠ WARNING

Even if machine stop operation by bar switch or stop switch is performed, the machine may not stop immediately to avoid design displacement. Do not bring your hands or face close to the needle or moving parts such as take-up lever until you confirm the machine stops completely.

1-3-1. Bar Switch Operation (TMFXV)



The machine is started or stopped by bar switch operation.
The effect of bar switch operation will vary according to the machine status (while the machine is stopped or running).

<Machine operation by bar switch>

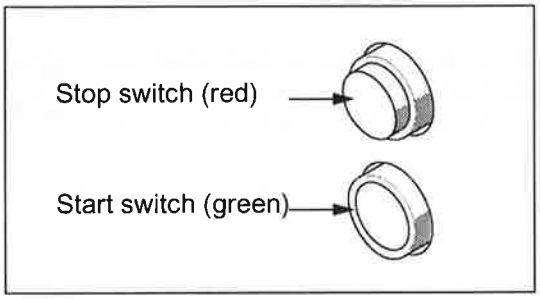
Operation \ Machine status	Stopped	Running
Push to the right, then release.	The machine starts operating.	
Push to the right and hold there.	The machine starts operating (inching mode). ↓ Release the bar switch. ↓ Normal machine operation starts.	
Push to the left, then release.	For frame back / frame forward motion (1 stitch) Reference: p.5-14	The machine stops operating.
Push to the left and hold there.	For frame back/frame forward motion • The machine starts frame forward or frame back motion in one stitch unit. <If the bar switch is released within 10 stitches> If the bar switch is released within 10 stitches from the start of frame back/frame forward motion, the frame back/frame forward motion stops.	The machine stops operating.
	<If the bar switch is released with 11 stitches and more> Frame back/frame forward motion will continue. It is possible to adjust the frame travel speed (*1) by turning the jog dial (in the range equivalent to 250 to 1000 rpm). ↓ To stop the frame back/frame forward motion in this state, push the bar switch to the left again.	

* 1 : It is displayed with rpm converted into main shaft rotating speed (*2). Actual speed varies depending on stitch length.

* 2 : The initial set value is 1000 (rpm). If frame back / forward is executed again after stopping it once, the speed setting returns to the initial value.

NOTE : If you release the bar switch after moving it right or left, the bar switch returns to the original position.

1-3-2. Starting/Stopping the Machine by Start/Stop Switch (TMFXV-C, TMFXV-II-C)



The machine is started or stopped by the operation of the start and switch switches.

The effect of start/stop switch operation will vary according to the machine status (while the machine is stopped or running).

<Machine behavior by the operation of the start/stop switch>

Machine status / Operation	Stopped	Running
Press the start switch (green), then release.	The machine starts operating.	
Press the start switch (green) and hold it pressed.	The machine starts operating (inching mode). ↓ Release the start switch (green). ↓ Normal machine operation starts.	
Press the stop switch (red), then release.	For frame back/frame forward motion (1 stitch) Reference: p.5-14	The machine stops operating.
Press the stop switch (red) and hold it pressed.	For frame back/frame forward motion • The machine starts frame forward or frame back motion in one stitch unit. <If the stop switch is released within 10 stitches> If the stop switch is released within 10 stitches from the start of frame back/frame forward motion, the frame back/frame forward motion stops.	The machine stops operating.
	<If the stop switch is released with 11 stitches or more> Frame back / frame forward motion will continue. It is possible to adjust the frame travel speed (*1) by turning the jog dial (in the range equivalent to 250 to 1000 rpm). ↓ To stop the frame back/frame forward motion, push the stop switch again.	

* 1 : It is displayed with rpm converted into main shaft rotating speed (*2). Actual speed varies depending on stitch length.

* 2 : The initial set value is 1000 (rpm). If frame back / forward is executed again after stopping it once, the speed setting returns to the initial value.

2. OPERATION BASICS

2-1. Precautions on Handling Floppy Disks and Floppy Disk Drive (FDD)

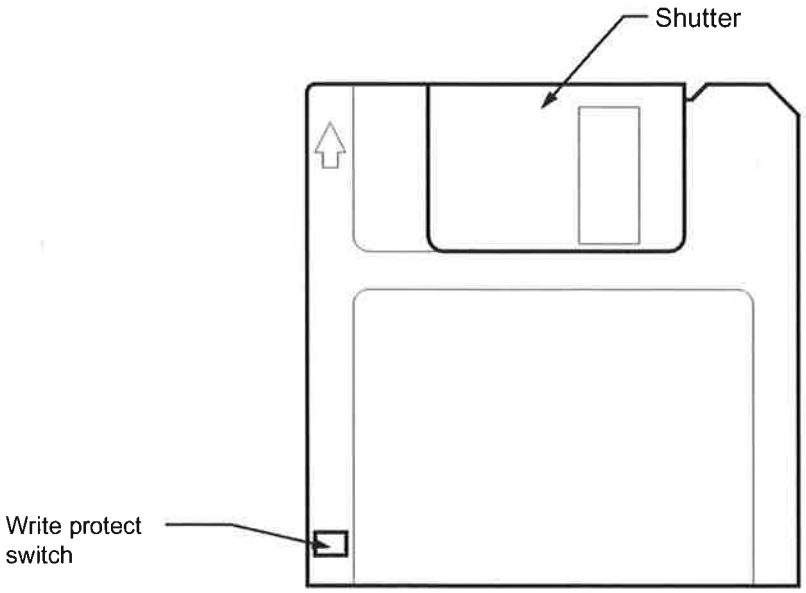
NOTE : It is recommended to use TAJIMA disks.

Although commercially available floppy disks can be used after formatting, TAJIMA does not guarantee the data written to such disks.

⚠ CAUTION

Observe the items indicated below when handling floppy disks.

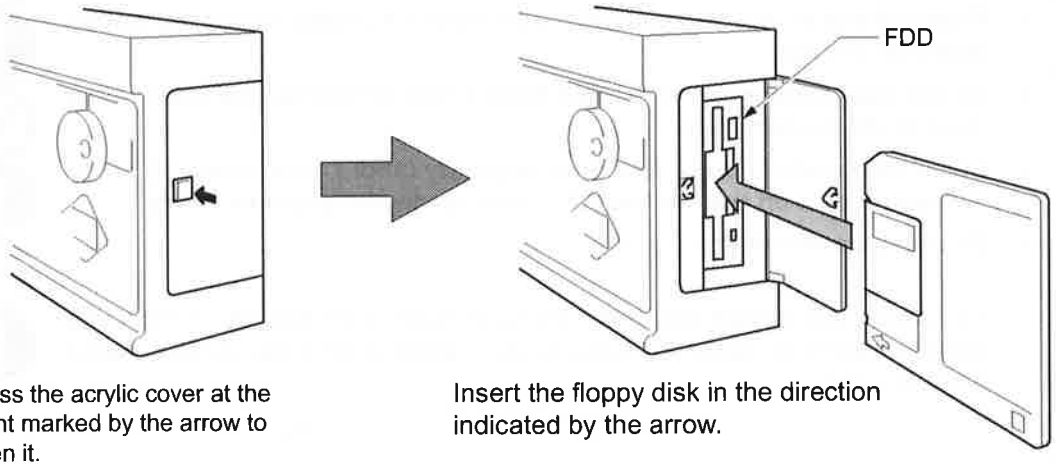
- **Do not put the floppy disk near magnets or objects such as a TV set which generate magnetic field.**
- **Do not expose the floppy disk to excessive heat, humidity, or direct sunlight.**
- **Do not place heavy objects on the floppy disk.**
- **Floppy disks do not last eternally. Data must be copied to backup floppy disks for storage.**
- **Do not use damaged or deformed floppy disk, otherwise the floppy disk drive could be damaged.**
- **Clean the head of floppy disk drive regularly (about once a month) using a cleaning disk on the market, otherwise read/write could be faulty.**
- **Do not open the shutter.**
- **To prevent the stored data from being erased, slide the tab of the write protect switch to open the write protect window of a floppy disk (write protect state).**



⚠ CAUTION

- **Insert a floppy disk slowly and carefully into the floppy disk drive. If a floppy disk is inserted impetuously, pressing the eject button may fail to eject the floppy disk. This could cause the floppy disk to be damaged and, in addition, the floppy disk drive could be damaged.**
- **Do not forcibly remove floppy disk from the floppy disk drive. If the floppy disk is forced out of the floppy disk drive, the floppy disk and the floppy disk drive could be damaged.**
- **Do not try to remove the floppy disk while the floppy disk drive is operating (The operation indicator lamp is lighting). The contents in the floppy disk could be destroyed.**

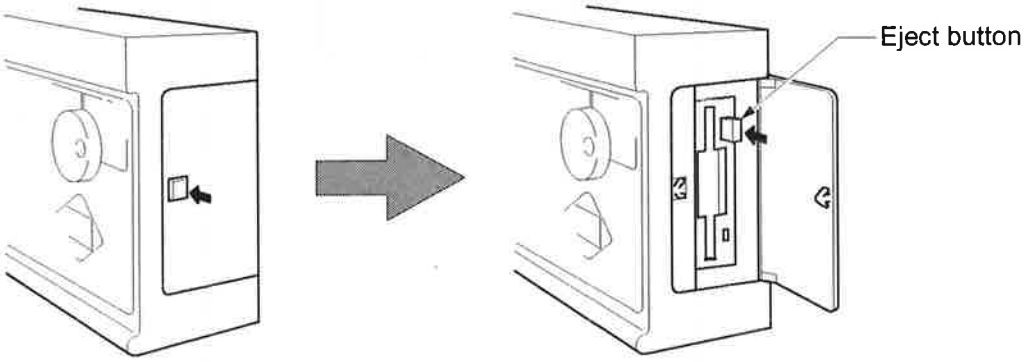
<Insertion>



Press the acrylic cover at the point marked by the arrow to open it.

Insert the floppy disk in the direction indicated by the arrow.

<Removal>



Push the eject button indicated by the arrow to eject the floppy disk from the floppy disk drive.

3. SOFTWARE INSTALLATION

Installation of the software is necessary when setting up the machine for the first time or when upgrading the software to the latest version.

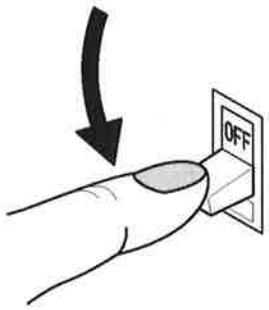
⚠ CAUTION

When the software is installed, all design data currently stored in memory are erased. Do not forget to save the necessary design data in floppy disks before installing the software.

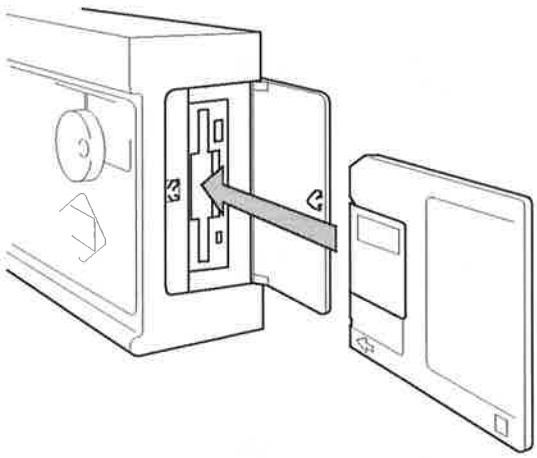
NOTE : For the operation to save the design data in floppy disk, refer to "Floppy Disk Processing (Save)" on p.3-34.

3-1. Procedure

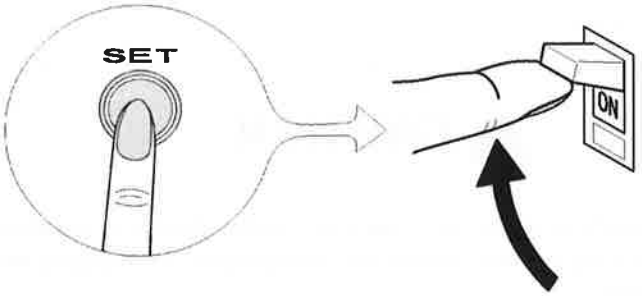
1. Turn the power switch OFF.



2. Insert the software floppy disk in the FDD.



3. Turn the power switch ON while pressing the SET key.

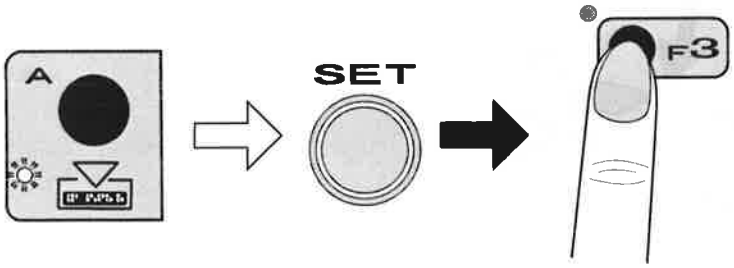


Keep the SET key pressing after turning the power switch ON.

The following message appears on the screen. Keep on pressing the SET key.

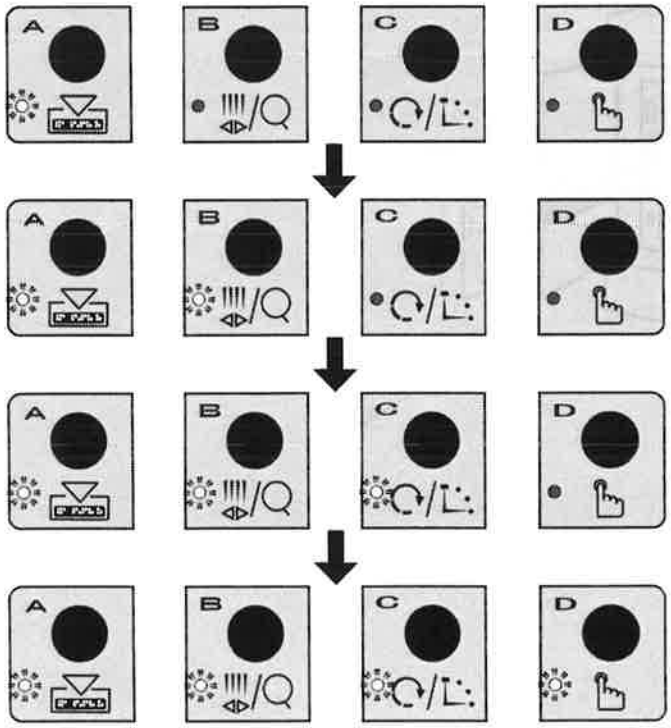
4. When the LED indicator in the Menu Key A lights, release the SET key and press the Function Key 3.

NOTE : Keep on pressing the Function Key 3 until software installation is completed.

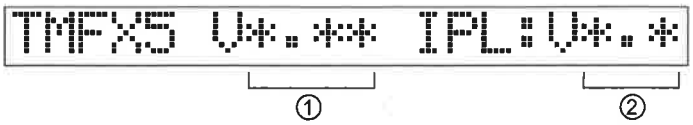


Software installation proceeds.

The LED indicators of Menu Keys A to D light in order as software installation proceeds.



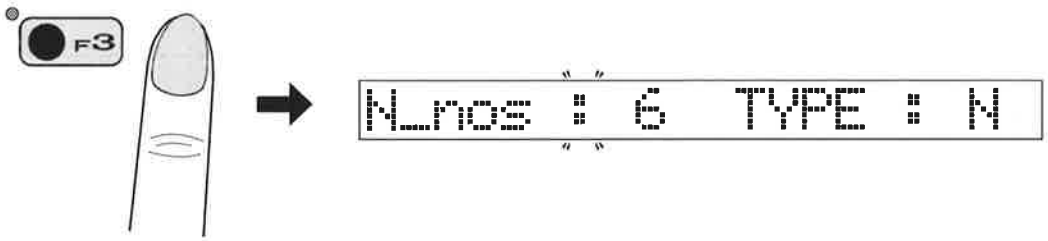
On completion of the software installation, all the LED indicators of Menu Keys A to D are lit. At the same time, the following message is displayed.



① Software version number

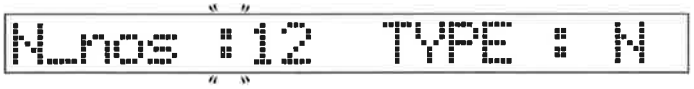
② ROM version number

5. When confirming the message as shown above after completion of the software installation, release the Function Key 3. ⟶ The screen displays the number of needles to be set.

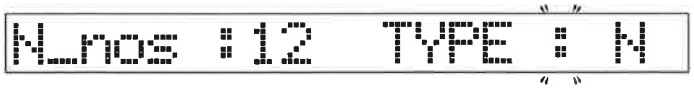


6. Setting the number of needles.

Select the number of needles. [Ex.: 12 Needles]



Press the [SET] key to decide the selection of number of needles.



7. Set the machine type.

Select the machine type. [Ex.: 2 (TMFXV-IIC)]

① TMFXV-IIC : 2
TMFXV•V-C : N
TMFXV-L•V-CL : L

SET

Press the [SET] key to decide the selection of machine type.

8. Set the number of heads of the machine.

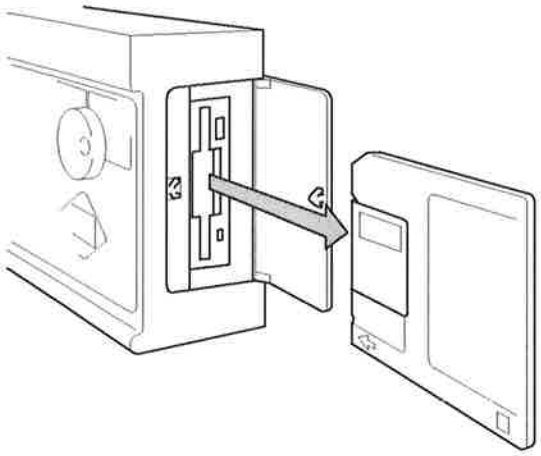
Select the number of heads of the machine. [Ex.: 8 (Heads)]

SET

Press the [SET] key to decide the selection. (The screen will return to the normal display.)

NOTE: Actual screen display differs depending on setting contents.

9. Remove the software floppy disk from the FDD.



NOTE 1: In case of TMFXV•V-C, TMFXV-L•CL perform "Frame Limit Origin Memory" operation (p.4-15) continuously.

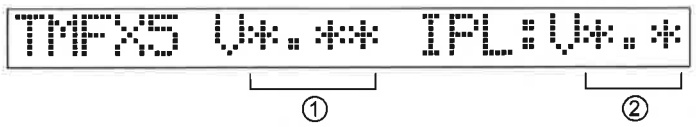
NOTE 2: When software installation is performed, each setting value will return to the initial value. Change it if necessary.

4. DISPLAY SCREEN

The display screen on the operation panel displays a variety of messages and information according to the status of the machine.

4-1. Display after Turning the Power ON

When the power switch is turned ON, the software executes a self check and the following message is displayed while self check is executed.

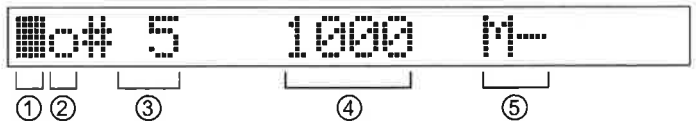


① Software version number

② ROM version number

4-2. Normal Display

After the completion of software self check, the display changes to the normal display.



① Fixed position display: This symbol is displayed when the machine stops at the fixed position.

② Automatic offset setting:

"O" ..... Automatic offset is set.

No display ..... Automatic offset is not set.

③ Needle position display: ..... Presently selected needle bar number is displayed.

④ RPM display: Presently set maximum rpm (main shaft speed) is displayed.

⑤ Data input complete/incomplete state display:

"M---" ..... Design data unregistered state

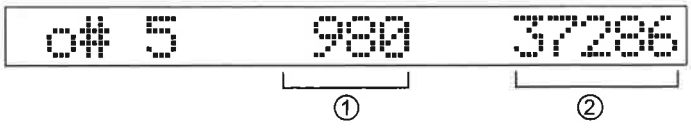
"M?" ..... Data input incomplete state

"M###" ..... Data input complete state

("###": Design data number)

4-3. Display during Operation

The screen display will become as shown below during operation.



① Display of actual speed (rpm): Actual speed during operation is displayed (*1).

② Stitch counter (per design)

*** 1 : It is possible to change the setting for maximum speed during operation by turning the jog dial. If you turn the jog dial while the machine is running, the actual speed also varies as the maximum speed is changed. While the jog dial is turned, the maximum speed is displayed in this area in parentheses "ex: (1000)" and if you stop turning the jog dial, the display returns to the actual speed display.**

5. INSPECTIONS BEFORE STARTING OPERATION

Before starting embroidering, be sure to inspect the following items. If an abnormality is found in the inspections, take the specified corrective measures.

NOTE : If the measures to be taken are not clear, please contact TAJIMA's distributor

⚠ WARNING

Turn the power switch OFF before carrying out pre-operation inspection.

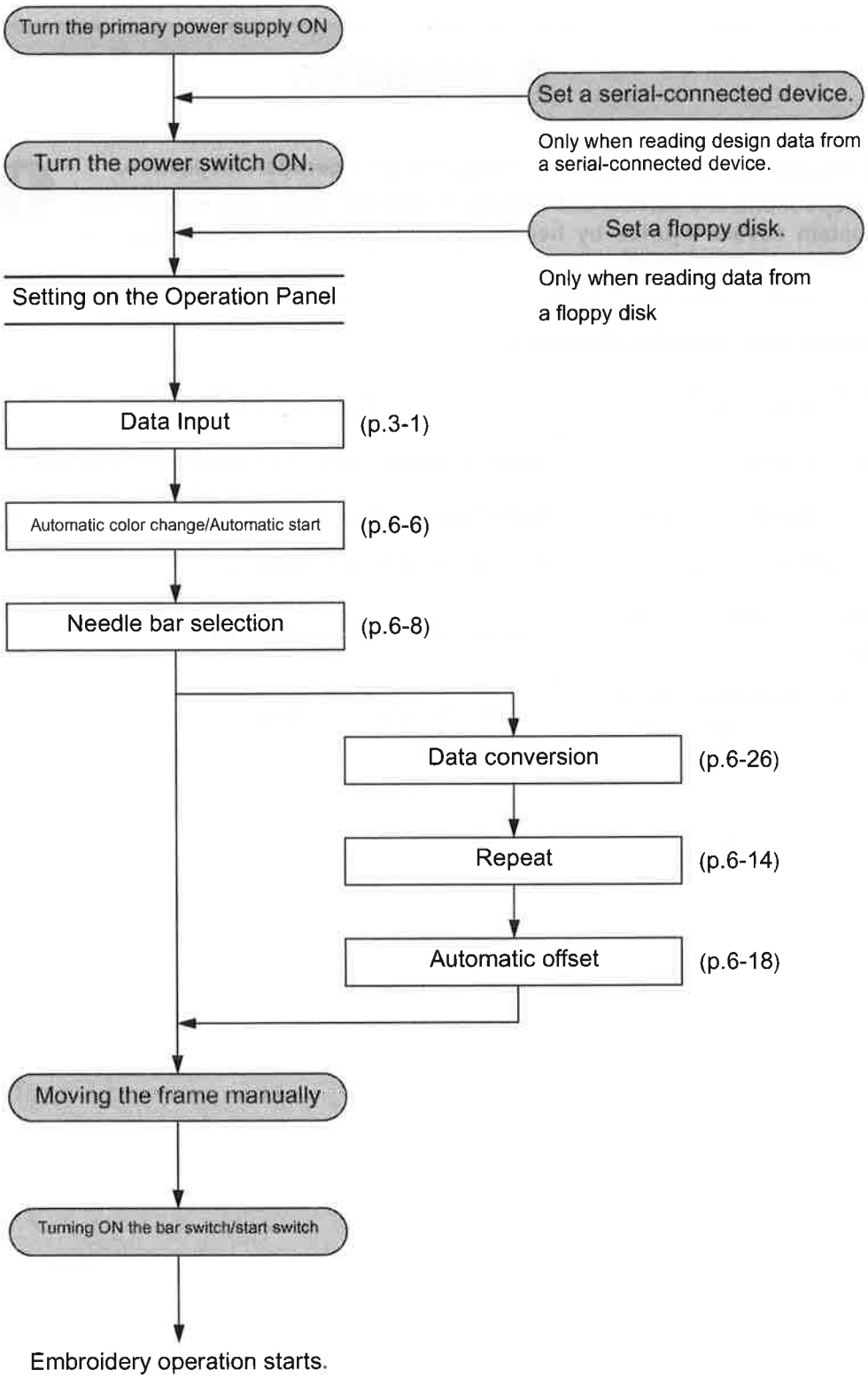
If the inspections are carried out with the power on, there is a danger that you sustain severe injuries by becoming entangled with the machine or being stabbed with needles.

<Inspections and Corrective Measures>

Inspection	Corrective Measures
Installation of covers.	Install all covers to the machine at correct positions.
Setting of embroidery thread	Set embroidery thread correctly.
Break and bent of needles	Change the defective needles.
Lubricated conditions of rotary hook etc.	Supply lubricating oil if necessary.
Oil leak and other faults of automatic lubrication system (option)	Contact TAJIMA's distributor.

6. BASIC OPERATION FLOW

The following flowchart shows basic operation procedure to be followed before starting embroidery.



7. GENERAL DESCRIPTION OF SETTING AND OPERATING ITEMS

■: Setting and operation that can be made even during embroidery. (*1).

□: Setting and operation that cannot be made during embroidery.

*1 : The state in which the machine is stopped after performing embroidery or frame forward for 1 or more stitches after data input.

	Setting Item	Outline	Page
■	Data input	Operation to input design data from memory, FDD, or serial-connected device	p.3-1
□	Memory delete	Operation to delete design data stored in memory	p.3-7
□	Standby data input	Operation to input design data from a serial-connected device (DG/ML, etc.)	p.3-11
■	Automatic color change/ automatic start	Setting to decide whether or not automatic color change/ automatic start is performed according to setting for needle bar selection	p.6-6
■	Needle bar selection	Setting for sequence of needle bars to be used (required for automatic color change)	p.6-8
□	Data conversion	Setting to reduce, enlarge, rotate, and reverse a design.	p.6-26
□	Repeat	Setting to embroider the same design repeatedly	p.6-14
□	Automatic offset	Setting to move the frame toward the operator when embroidery is finished	p.6-18
■	Maximum rpm	Setting for the maximum rpm of the main shaft	p.5-1
■	Total stitch counter/ design timer	Operation to display the total number of stitches so far and embroidering time of a design	p.4-18
■	Frame back/forward (FB/ FF)	Setting to select operation to execute FB/FF in stop code units	p.4-12
		Setting to select operation to execute FB/FF by designated number of stitches	p.4-14
		Setting to select operation to execute frame back/forward	p.5-14
■	Automatic origin return	Setting to return the frame automatically to the design start position when embroidery is finished	p.6-23
■	Confirmation of Remaining Stitches for Lubrication	Operation to confirm the number of remaining stitches until lubrication starts (option)	p.4-19
■	Manual color change	Operation to select needle bar(s) manually	p.4-1
■	Manual thread trimming	Operation to trim thread manually	p.4-3
■	Manual origin return	Operation to return the frame to the design original point manually	p.4-4
■	Manual offset	Operation to return the frame to the original position when moving the frame by manual frame travelling or manual origin return during embroidery	p.4-5
□	Trace	Operation to move the frame according to the maximum embroidery range of the set design data	p.4-6
■	Manual lubrication	Operation to lubricate in other case than lubrication cycle of automatic lubrication (option)	p.4-7
■	Manual frame travelling	Operation to move the frame manually	p.4-10
■	Jump conversion	Setting to convert jump code to frame stepping code and for the frame travelling method for frame stepping	p.6-29
■	Automatic jump	Setting to perform automatic jump	p.6-31
■	Satin stitch	Setting to extend the satin stitch width	p.6-32

■	All head sewing start after frame back (*1)	Setting for the all-head sewing start point after frame back operation, and to decide whether or not the machine halts at the all-head sewing point	p.6-24
□	Software frame limit	Setting to confirm whether or not a design can be embroidered within the embroidery space	p.5-16
■	Low speed rpm	Setting for the lowest rpm of the main shaft	p.5-3
■	Number of start inching times	Setting for the number of inching times at start	p.5-7
■	Frame travel speed	Setting for the frame travel speed for origin return, offset feed, etc.	p.5-13
■	Upper thread breakage detection	Setting for the upper thread breakage detection method	p.6-1
■	Automatic thread trimming	Setting to decide whether or not the ATH operates and the action when it operates	p.6-3
■	Max. rpm limit	Setting for the maximum rpm of the main shaft	p.5-5
■	Frame drive start timing	Setting for the frame drive start timing	p.5-9
□	Frame driving method	Setting for the frame drive method	p.5-11
■	Frame limit origin memory	Operation to make the machine to memorize the frame limit within an embroidery range	p.4-15
□	Data edit (modify, insert, delete)(*2)	Operation to modify, insert, and delete stitch data, function code, etc. of design stored in memory	p.3-15 p.3-21 p.3-27
□	Data edit (cleanup)	Operation to clean up stitch data of a design registered in memory	p.3-32
■	Floppy disk processing	Operation to write data stored in memory to a floppy disk, to deleted a design from a floppy disk, and to format a floppy disk.	p.3-34
■	Confirmation mode	Operation to confirm the current settings. * The confirmation in confirmation mode is enabled only in the normal display state	p.4-20
■	Power resume	Operation to avoid design displacement caused by power failure during embroidery	p.4-16
■	Under thread breakage detection	Setting for the under thread breakage detection method (option)	p.7-1
□	Sub-table Lifter	Setting to use the sub-table lifter, and the operation (TMFXV-C)	p.4-8 p.7-3
□	Boring device	Setting to decide whether or not boring is performed, and for the data processing method for boring (option)	p.7-4
□	Cording device	Setting to decide whether or not cording is performed (option)	p.7-6
■	Automatic lubrication system	Setting to decide whether or not automatic lubrication system is used (option)	p.7-7
■	Bobbin changer	Setting to decide whether or not bobbin changer is used (option)	p.7-9
■	Network	Setting to decide whether or not network connection is made (option)	p.7-10

* 1 : The setting that determines whether or not the machine halts at the all-head sewing start point cannot be made while the machine is in the embroidery process.

* 2 : Design data can be edited even when the design is being embroidered.

CHAPTER 3 DATA OPERATION

1. DATA INPUT

1-1. Data Input (Memory)

The data input (memory) operation calls the design data stored in memory to use it for embroidery.

Menu Key	Screen
	1

<Setting and Screen Display>

① Design data number

② Design name (*1)

*1 : Design name is displayed only when a design name is assigned to the design data.
Design name of up to 8 characters may be displayed.

<Required Setting Item>

Setting Item	Setting Range
Design data number.	1 to 99

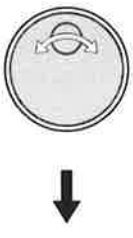
1-1-1. Procedure

1. Select the Data Input (Memory) function.

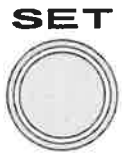
Press the Menu Key A to display the screen as shown below.

① Displays the smallest design data number among the design data numbers registered in memory.

2. Select the desired design data number.



Select design data number by turning the jog dial [ex.: 5].



Press the [SET] key to decide the selection.

On completion of the calling of the design data, the screen returns to the normal display (p.2-11).

① Displays the selected design data number.

NOTE: Actual display differs depending on the setting contents.

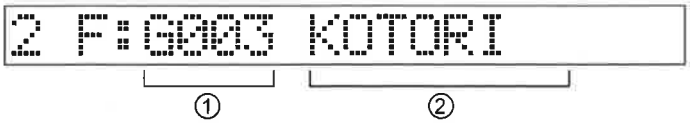
1-2. Data Input (Floppy Disk)

This operation loads the design data from floppy disk (FD) to memory through the built-in floppy disk drive (FDD) and store it in memory to make embroidery possible.

Menu Key	Screen
	2

<Setting and Screen Display>

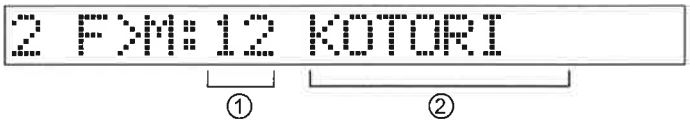
• When selecting design data number of floppy disk



① Design data number

② Design name (*1)

• When selecting design data number of memory



① Design data number

② Design name (*1)

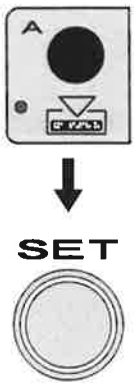
*1 : Design name is displayed only when a design name is assigned to the design data. Design name of up to 8 characters may be displayed.

<Required Setting Items>

Setting Item	Setting Range
Design data number (FD)	2DD: 1 to 111, 2HD: 1 to 223
Design data number (memory)	1 to 99

1-2-1. Procedure

1. Select the Data Input (FD) function.

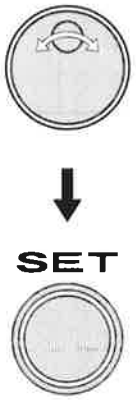


Press the Menu Key A to display screen as shown below.

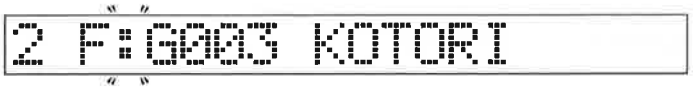
Press the [SET] Key to decide "Data Input (FD)".

① Displays the smallest design number among the design numbers registered in floppy disk.

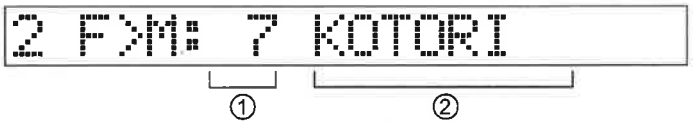
2. Select the design data number of the design to be loaded from floppy disk to memory.



Select design data number by turning the jog dial [ex.: G003].



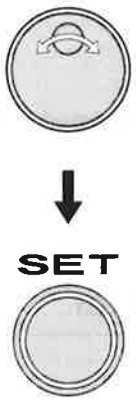
Press the [SET] key to decide the selection.



① Displays the smallest number among non-registered design data numbers.

② Displays the design name registered in memory.

3. Select the design data number to be registered in memory.



Select the design data number by turning the jog dial [ex.: 12].

Press the [SET] key to decide the selection.

On completion of registering the data to memory, the screen returns to the "normal display" (p.2-11).

① Displays the selected design data number.

NOTE: Actual display differs depending on the setting contents.

1-3. Data Input (Serial)

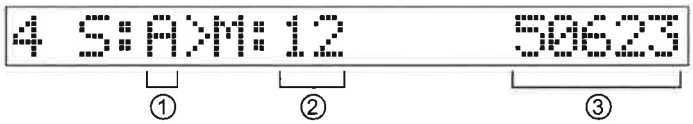
This operation inputs the design data from the serial-connected device (DG/ML, etc.) to memory to make embroidery possible.

Menu Key	Screen
	

⚠ CAUTION

Turn ON the power of the machine before sending data from the device connected to the serial connector. If turning ON the power of the machine after data sending operation, data is not sent correctly and embroidery will be troubled.

<Setting and Screen Display>



① Code format of the design data to be read

② Design data number (memory)

③ Remaining memory capacity

<Required Setting Items>

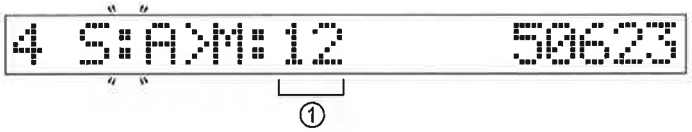
Setting Item	Setting Range
Code format	A (Automatic recognition), T (Tajima), B (Barudan), Z (ZSK)
Design data number (memory)	1 to 99

NOTE : Devices that can be connected to the serial connector are indicated below.
- **DG/ML (Punching & lettering editing system)**

1-3-1. Procedure

1. Select the data Input (Serial) function.

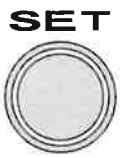
Press the Menu Key A to display screen title as shown below.



① Displays the smallest design data number among the non-registered design data numbers in the memory.

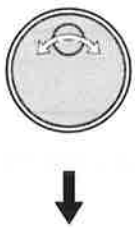
2. Select the design data code format to be read.

Select code format by turning the jog dial [ex.: T (TAJIMA)].

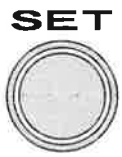


Press the [SET] key to decide the selection.

3. Select the design data number of memory for registering the design data.



Select design data number by turning the jog dial [ex.: 18].



Press the [SET] key to decide the selection.

On completion of registering the data to memory, the screen returns to the "normal display" (p.2-11).

① Displays the selected design data number.

NOTE: Actual display differs depending on the setting contents.

2. MEMORY DELETE

2-1. Memory Delete

Menu Key	Screen
	

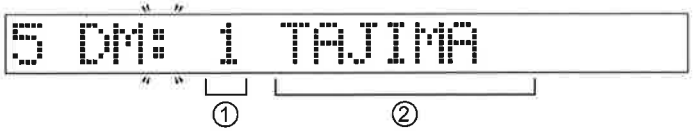
The memory delete operation deletes design data stored in memory.
For deleting memory stored designs, two modes of operation as indicated below are available.

- Deleting the selected design data
- Deleting all design data stored in memory

NOTE : It is not allowed to delete the memory until the machine finishes embroidery.

<Setting and Screen Display>

NOTE : When selecting "Memory Delete", the alarm will sound.



Display changes alternately (only when deleting the selected design data).

① Design data number (*1)

*1 : "00" is displayed if the "all design data delete" mode is selected.

② Design name (*2)

*2 : Design name is displayed only when a design name is assigned to the design data. However, no display is made when "all data delete" is selected.

③Data size (number of stitches) of the selected design (*3)

*3 : No display is made when "all data delete" is selected.

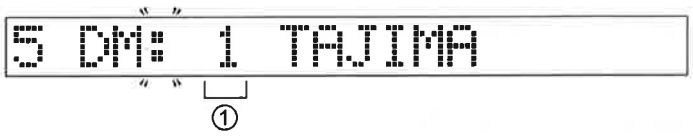
<Required Setting Item>

Setting Item	Setting Range
Design data number (memory)	1 to 99 (for deleting only the selected design data) 00 (for deleting all memory registered design data)

2-1-1. Procedure

1. Select the Memory Delete function.

Press the Menu Key A to display screen title as shown below.



①

Display changes alternately.

① Displays the smallest design number among the design numbers registered in memory.

NOTE: When selecting "Memory Delete", the alarm will sound.

2. Select the mode of memory delete operation.
<Deleting only the selected design data>

Select design data number to be deleted [ex.: 18].

Press the [SET] key to decide the selection.

On completion of data deletion, the screen as shown below will be displayed.

Display switches alternately.

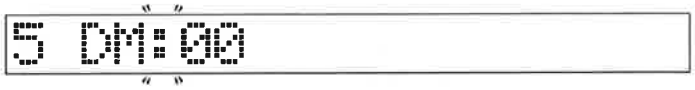
① Displays the next design number to the design number that has been deleted among the design numbers registered in memory.

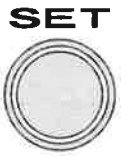
NOTE: When performing other setting(s)/operation(s), press the corresponding menu key(s)/function key(s).

When pressing the key, the screen returns to the "normal display" (p.2-11).

<Deleting all design data>

Select "00" by turning the jog dial.





Press the [SET] key to decide the selection.

On completion of data deletion, the screen as shown below will be displayed.

NOTE: When performing other setting(s)/operation(s), press the corresponding menu key(s)/function key(s).

When pressing the key, the screen returns to the "normal display" (p.2-11).

3. STANDBY DATA INPUT

3-1. Standby Data Input

Menu Key	Screen
	

This operation allows the design data to be input to the memory from the external serial-connected device. The status in which standby data input is possible is called the standby status and if the design data is input from the external device in the standby status, the data is automatically set. The design data input by standby data input will be deleted from memory when other design data is input.

NOTE : Standby data input is possible when the data has not been set or when the machine has not been started or frame forward operation is not performed even if the data has been set. Note that even in this status, data input is not possible during color change operation (automatic and manual) and frame traveling.

■ External device that can be used

DG/ML: To be connected to the serial I/F connector (p.1-10).

⚠ CAUTION

- **When connecting an external device to the machine, turn "OFF" the power of the external device and the machine. When turning "ON" the power, turn "ON" the power of the external device and then turn "ON" the power of the machine.**
- **When transmitting data from an external device, check if the power of the machine is turned "ON".**

■ Remarks related to the standby data input

- **It is possible to start embroidery when the fixed time has elapsed after the start of standby data input (memorizing operation p.3-13).**
- **Before inputting the data in the standby mode, make sure that there is sufficient free memory capacity to allow the input of the design data.**
  If the memory gets full during standby data input operation, an error occurs and data input is interrupted with error code [2BA] displayed. If this occurs while memorizing operation is performed, further embroidering is disabled.
- **When the machine status is switched from the normal status to standby data input status or vice versa, a part of setting is relapsed with the initial setting (*1) for the design data that is input first after the change of the operation status.**
  After the completion of standby data input, the setting for the design can be changed as required (not possible when the machine is running).

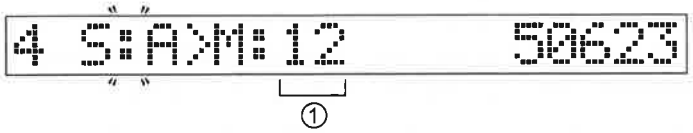
* 1 : The items and initial setting values with which the setting is replaced are indicated below.

Setting Items	Initial Settings
Data conversion	X: 100%, Y: 100%, Rotation angle: 0°, Mirror image: No
Repeat	X: 1, Y: 1, Design interval: 0mm, Priority: X, Design interval function: frame step
Automatic offset	No
Software frame limit	OFF

3-1-1. Procedure

1. Select the Data Input (Serial) function.

Press the Menu Key A to display the screen as shown below.



① The smallest number among non-registered design data numbers is displayed.

2. Select the code format "A (automatic recognition)".

NOTE : When executing standby data input, set the code format at data input (serial) to "A (automatic recognition)" so that any design data can be read. If the design data is not read by "A (automatic recognition)", check the format of the design data and select the code format again.

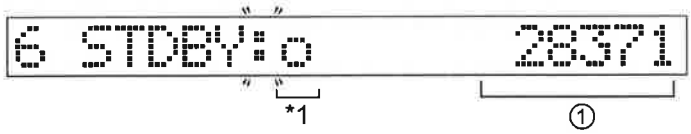
Select the code format "A (automatic recognition)" by turning the jog dial.

SET

Press the [SET] key to decide the selection.

3. Switch to the standby mode.

Press the Menu Key A to display the screen as shown below.



* 1: Always displays "O"

① Remaining memory capacity (number of stitches)

Press the [SET] key to make the indicator lamp of the Menu Key A flash. ⟶

NOTE: When the indicator lamp flashes, the below screen is displayed.

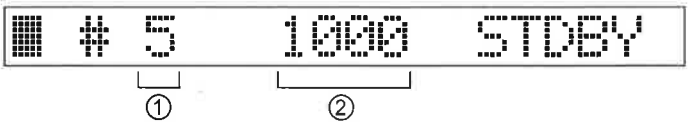
4. Input the design data.

Input design data from the serial-connected external equipment.
When inputting design data, the indicator lamp of the Menu Key A flashes.

5. Execute standby operation.

<When memorizing operation is performed>

When the screen becomes as shown below with the Menu Key A in flashing status, start the embroidery.



① Needle position display: Displays the needle bar number that is presently selected.

② R.P.M. display: Displays the maximum R.P.M. that is presently set.

NOTE: The status of the indicator lamp of the Menu Key A at memorizing operation changes as follows:

•Under standby data input  : lit

•On completion of standby data input  : unlit

After the operation is finished, the screen becomes as shown below with the Menu Key A in unlit status (operation standby status).

<When operating the machine after completion of standby data input>

When the screen becomes as shown below with the Menu Key A in unlit status (operation standby status), start the embroidery. When the operation is finished, the screen returns to the operation standby status.

NOTE 1: If pressing the SET key in operation standby status, the indicator lamp of the Menu Key A flashes, and it becomes possible to execute standby data input of other design (input standby status). To return from input standby status to operation standby status, press the SET key again.

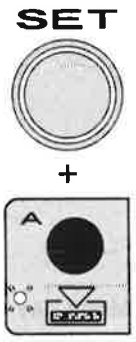
NOTE 2: When code numbers [2B2, 2B3, 2B4, 2B5, 2BA, 3D1, 3D6] are displayed during standby data input, press the SET key to reset the machine. If resetting, the standby status will be canceled, and the design data that has been input by standby data input and the design data input halfway by standby data input will be deleted.

6. Canceling the standby mode

NOTE : To cancel the standby mode, execute either of the following operations after checking if the machine stops and it is not in the standby data input status (*1).
- **Press the Menu Key A while holding the [SET] key.**
- **Input other data.**

*** 1 : The indicator lamp of the Menu Key A should not be lit.**

<When canceling the mode by pressing the Menu Key A while holding the [SET] key>



Press the Menu Key A while holding the [SET] key.

When canceling, the indicator lamp of the Menu Key A will be unlit and the screen will become "normal display" (p.2-11).

NOTE 1: The design data input by standby data input is deleted, and it will become data input incomplete status.

NOTE 2: Actual screen display differs depending on the setting contents.

4. DATA EDIT

4-1. Data Edit (Modify)

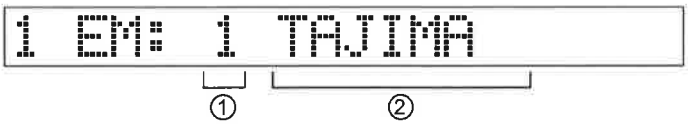
Menu Key	Screen No.
	1

The data edit (modify) operation modifies the design data registered in memory.

Modification of design data is possible in one stitch unit and the search function can be used for locating the stitch for which the data should be modified.

<Setting and Screen Display>

- When selecting design data number

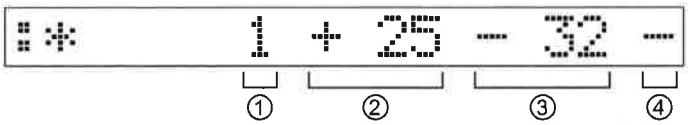


① Design data number.

② Design name (*1)

*1 : Design name is displayed only when a design name is assigned to the design data.

- When editing design design data



① Stitch data number (the above example is 1st stitch)

② X data

③ Y data

④ Function code (*2)

*2 : S: Stop, J: Jump, H: High speed, L: Low speed, A: ATH, P: Sequin, E: End, -: Stitch

<Required Setting Items>

Setting Item	Setting Range
Design data number (memory)	1 to 99
Stitch data number	1 to n (the last stitch number of the selected design)
X data	-12.7 to +12.7 mm
Y data	-12.7 to +12.7 mm
Function code	S: Stop, J: Jump, H: High speed, L: Low speed, A: ATH, P: Sequin, E: End, -: Stitch

4-1-1. Procedure

1. Select the Data Edit (Modify) function.

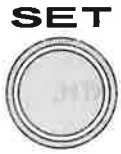
Press the edit key to display the screen title as shown below.

Press the [SET] key to decide the selection.

① The screen displays the smallest design data number among the design data numbers registered in memory.
If the "data edit (modify)" is selected during embroidery, the screen displays the set design number with its design name.

2. Select the design data number to be edited.

Select design data number by turning the jog dial [ex.: 5 (SAKURA)].

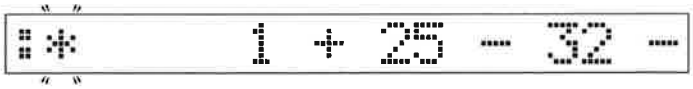


Press the [SET] key to decide the selection.

3. Select the target stitch.

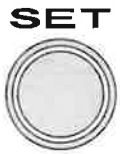
<Without using the search function>: Use the jog dial or jog shuttle to select the stitch data.

Press the [SET] key to decide the selection of the stitch data.



NOTE: If selection is performed during embroidery, the current stitch data is displayed. In this case, only the current stitch and after can be selected.

Select the stitch data by turning the jog dial or jog shuttle [ex.: 348th stitch].

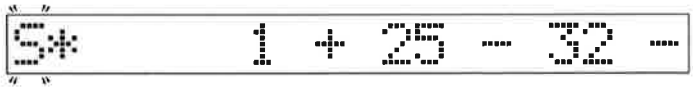


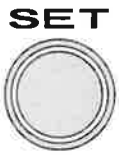
Press the [SET] key to decide the selected stitch data.

This completes the stitch number selection. Proceed to the procedure 4. “Modify the X data” (p.3-19).

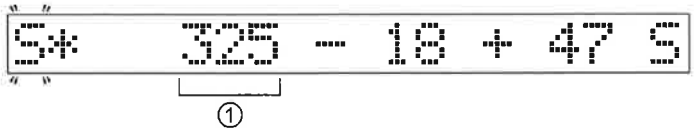
<Using the search function>: Specify the function code to select the stitch data.

Select the function code to be searched for by turning the jog dial [ex.: S (Stop)].





Press the [SET] key to execute searching.



① The first stitch that contains the selected function code “S (Stop)” is located.

NOTE 1: If searching is performed during embroidery, only the present stitch and the following stitches can be searched.

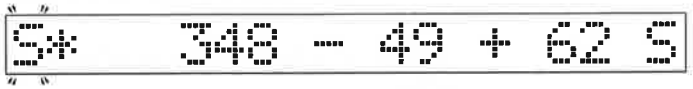
NOTE 2: Every time the [SET] key is pressed, stitch data containing the same function code will be searched one by one.

NOTE 3: If the selected function code is not found, the display remains unchanged.

NOTE 4: It is also possible to select other function codes by turning the jog dial.

SET

Press the [SET] key to continue searching until the target stitch data is displayed [ex. 348th stitch].



Select " ⠿ " by turning the jog dial.

SET

Press the [SET] key to decide the selection.

NOTE: It is also possible to select the stitch data by turning the jog dial. If selecting is performed during embroidery, only the present stitch and the following stitches can be selected.

SET

Press the [SET] key to decide the selected stitch data.

This completes the stitch number selection. Proceed to the procedure 4. "Modify the X data" (p.3-19).

4. Modify the X data.

Select the X data value after modification by turning the jog dial [ex.: +26 (+2.6mm)].

NOTE: If it is not necessary to modify the X data, simply press the [SET] key to advance to the next step for modifying the Y data.

SET

Press the [SET] key to decide the selected value.

5. Modify the Y data.

Select the Y data value after modification by turning the jog dial [ex.: -39 (-3.9mm)].

SET

Press the [SET] key to decide the selected value.

6. Modify the function code.

Select the function code after modification by turning the jog dial [ex.: J (Jump)].

SET

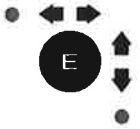
Press the [SET] key to decide the selected value

The screen displays the moved-up by one stitch data.

<Modifying the other stitch data>

Return to the procedure 3. "Select the target stitch" (p.3-17) to select the stitch to be modified.

<Ending the Data Edit (Modify) function>



Press the manual frame travel mode key.
The screen returns to the "normal display" (p.2-11).

- When editing design data during embroidery

① The screen displays the selected design data number (It is possible to continue the embroidery).

NOTE: Actual display differs depending on the setting contents.

- When editing design data for which embroidery is not on the way

① It becomes data set incomplete status (Input data when performing embroidery).

NOTE: Actual display differs depending on the setting contents.

4-2. Data Edit (Insert)

This operation inserts stitch data to the design data registered in memory.

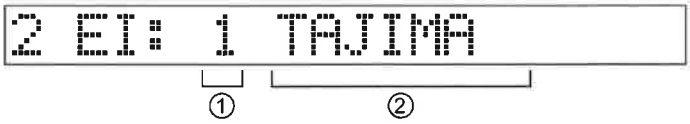
Insertion of stitch data is possible in one stitch unit and the search function can be used for locating the data insertion position.

Menu Key	Screen No.
	2

NOTE : The stitch data is inserted just before the target stitch data of which position is selected as the location of data insertion.

<Setting and Screen Display>

- When selecting design data number

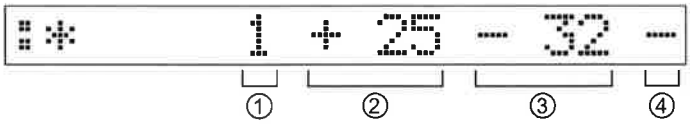


① Design data number

② Design name (*1)

*1 : Design name is displayed only when a design name is assigned to the design data.
Design name of up to 8 characters may be displayed.

- When editing design data



① Stitch data number (the above example is 1st stitch)

② X data

③ Y data

④ Function code (*2)

*2 : S: Stop, J: Jump, H: High speed, L: Low speed, A: ATH, P: Sequin, E: End, -: Stitch

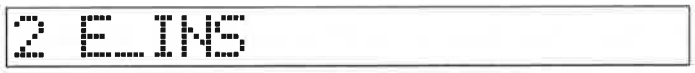
<Required Setting Items>

Setting Item	Setting Range
Design data number (memory)	1 to 99
Stitch data number	1 to n (the last stitch number of the selected design)
X data	-12.7 to +12.7 mm
Y data	-12.7 to +12.7 mm
Function code	S: Stop, J: Jump, H: High speed, L: Low speed, A: ATH, P: Sequin, E: End, -: Stitch

4-2-1. Procedure

1. Select the Data Edit (Insert) function.

Press the edit key to display the screen title as shown below.



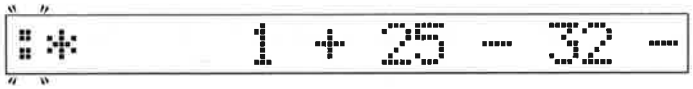
Press the [SET] key to decide the selection.

① The screen displays the smallest design number among the design numbers registered in memory.
If "Data Edit (Insert)" is selected during embroidery, the design data number and the design name are displayed.

2. Select the design data number to be edited.

Select design data number by turning the jog dial [ex.: 5 (SAKURA)].

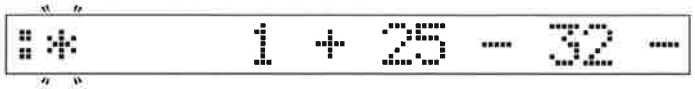
Press the [SET] key to decide the selection.



3. Select the target stitch.

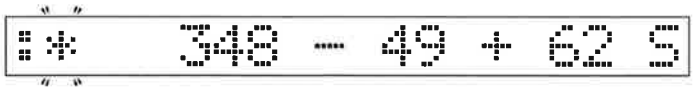
<Without using the search function>: Use the jog dial or jog shuttle to select the stitch data.

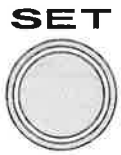
Press the [SET] key to decide the selection of the stitch.



NOTE: If selection is performed during embroidery, the current stitch data is displayed. In this case, it is only possible to select the current stitch and after.

Select the target stitch data by turning the jog dial or jog shuttle [ex.: 348th stitch].



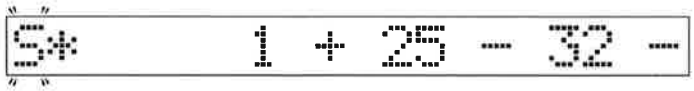


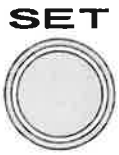
Press the [SET] key to decide the selected stitch data.

This completes the stitch number selection. Proceed to the procedure 4. "Set the X data" (p.3-25).

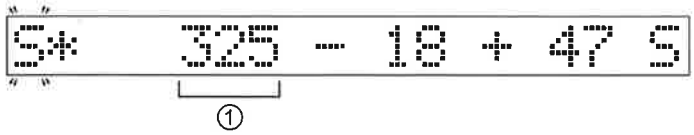
<Using the search function>: Specify the function code to select the stitch data.

Select the function code to be searched for by turning the jog dial [ex.: S (Stop)].





Press the [SET] key to execute search.



① The first stitch that contains the selected function code "S (Stop)" is located.

NOTE 1: If searching is performed during embroidery, only the present stitch and the following stitches can be searched.

NOTE 2: Every time the [SET] key is pressed, stitch data containing the same function code will be searched one by one.

NOTE 3: If the selected function code is not found, the display remains unchanged.

NOTE 4: It is also possible to select other function codes by turning the jog dial.

Press the [SET] key to continue searching until the target stitch data is displayed [ex. 348th stitch].

Select " ⠿ " by turning the jog dial.

Press the [SET] key to decide the selection.

NOTE: It is also possible to select the stitch data by turning the jog dial. If selecting is performed during embroidery, only the present stitch and the following stitches can be selected.

Press the [SET] key to decide the selected stitch data.

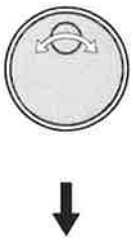
This completes the stitch number selection. Proceed to the procedure 4. "Set the X data" (p.3-25).

4. Set the X data.

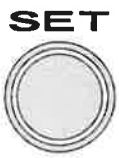
Select X data value to be inserted by turning the jog dial [ex.:+26 (+2.6mm)].

Press the [SET] key to decide the selected value.

5. Set the Y data.



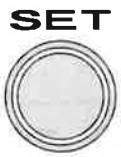
Select Y data to be inserted by turning the jog dial [ex.: -39: (-3.9mm)].



Press the [SET] key to decide the selected value.

6. Set the function code.

Select function code to be inserted by turning the jog dial [ex.: J (Jump)].

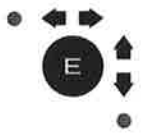


Press the [SET] key to decide the selected value.

The stitch data number shifts to the next (349th) and the data of the 348th stitch before this insertion are displayed as the 349th stitch data.

<Inserting other stitch data>: Return to the procedure 3. "Select the target stitch" (p.3-23) to select the stitch to be inserted.

<Ending the Data Edit (Insert)>



Press the manual frame travel mode key.
The screen returns to the "normal display" (p.2-11).

- When editing design data during embroidery

① The screen displays the selected design data number (It is possible to continue the embroidery).

NOTE: Actual display differs depending on the setting contents.

- When editing design data for which embroidery is not on the way

① It becomes data set incomplete status (Input data when performing embroidery).

NOTE: Actual display differs depending on the setting contents.

4-3. Data Edit (Delete)

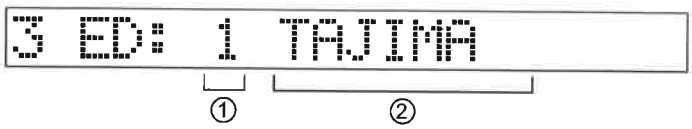
This operation deletes stitch data of the design data registered in memory.

Deletion of stitch data is possible in one stitch unit and the search function can be used for locating the stitch data to be deleted.

Menu Key	Screen No.
	3

<Setting and Screen Display>

• When selecting design data number

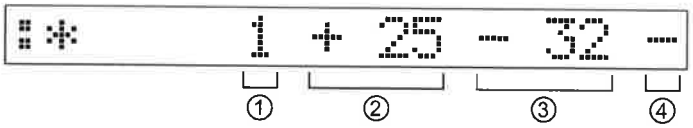


① Design data number.

② Design name (*1)

*1 : Design name is displayed only when a design name is assigned to the design data.
Design name of up to 8 characters may be displayed.

• When editing design data



① Stitch data number (the above example is 1st stitch)

② X data

③ Y data

④ Function code (*1)

*1 : S: Stop, J: Jump, H: High speed, L: Low speed, A: ATH,
P: Sequin, E: End, -: Stitch

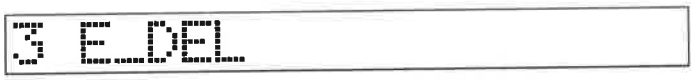
<Required Setting Item>

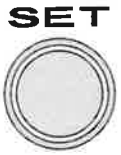
Setting Item	Setting Range
Design data number (memory)	1 to 99
Stitch data number	1 to n (the last stitch number of the selected design)

4-3-1. Procedure

1. Select the Data Edit (Delete) function.

Press the edit key to display the screen title as shown below.





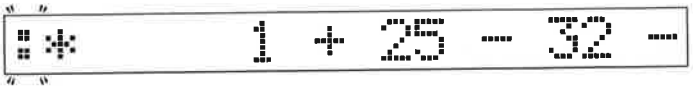
Press the [SET] key to decide the selection.

① The screen displays the smallest design number among the design numbers registered in memory.
If "Data Edit (Delete)" is selected during embroidery, the design data number and the design name are displayed.

2. Select the design data number to be edited.

Select design data number by turning the jog dial [ex.: 5 (SAKURA)].

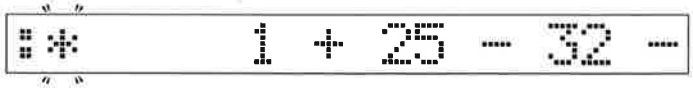
Press the [SET] key to decide the selection.



3. Select the target stitch.

<Without using the search function>: Use the jog dial or jog shuttle to select the stitch data.

Press the [SET] key to decide the selection of the stitch data.



NOTE: If selection is performed during embroidery, the current stitch data is displayed. In this case, it is only possible to select the current stitch and after.

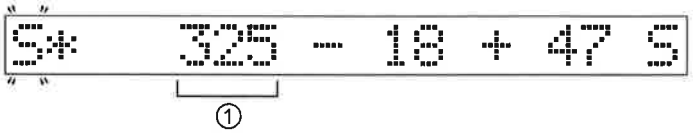
Select the target stitch data by turning the jog dial or jog shuttle [ex.: 348th stitch].

This completes the stitch number selection. Proceed to the procedure 4. "Delete the stitch data" (p.3-30).

<Using the search function>: Specify the function code to select the stitch data.

Select the function code to be searched for by turning the jog dial [ex.: S (Stop)].

Press the [SET] key to execute search.



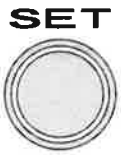
① The first stitch that contains the selected function code "S (Stop)" is searched.

NOTE 1: If searching is performed during embroidery, only the present stitch and the following stitches can be searched.

NOTE 2: Every time the [SET] key is pressed, stitch data containing the same function code will be searched one by one.

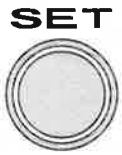
NOTE 3: If the selected function code is not found, the display remains unchanged.

NOTE 4: It is also possible to select other function codes by turning the jog dial.



Press the [SET] key to continue searching until the target stitch data is displayed [ex. 348th stitch].

Select " ⠿ " by turning the jog dial.



Press the [SET] key to decide the selection.

NOTE: It is also possible to select the stitch data by turning the jog dial. If selecting is performed during embroidery, only the present stitch and the following stitches can be selected.

This completes the stitch number selection. Proceed to the procedure 4. "Delete the stitch data" (p.3-30).

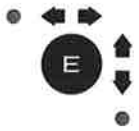
4. Delete the data.

Press the [SET] key to delete the selected stitch data.

The data of the 349th stitch before deletion are displayed as the stitch data of the 348th stitch.

<Deleting other stitch data>: Return to the procedure 3. "Select the target stitch" (p.3-29) to select the stitch data to be deleted.

<Ending the Data Edit (Delete)>



Press the manual frame travel mode key.
The screen returns to the "normal display" (p.2-11).

• When editing design data during embroidery

① The screen displays the selected design data number (It is possible to continue the embroidery).

NOTE: Actual display differs depending on the setting contents.

• When editing design data for which embroidery is not on the way

① It becomes data set incomplete status (Input data when performing embroidery).

NOTE: Actual display differs depending on the setting contents.

4-4. Cleanup

Menu Key	Screen No.
	4

This operation deletes minute stitches in the deign data registered in memory to be absorbed by the succeeding stitches.

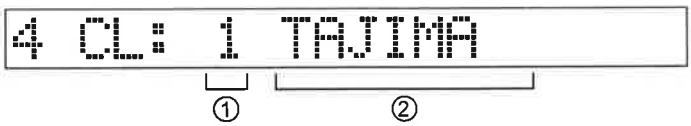
NOTE : Data edit (cleanup) operation is not possible during embroidery.

⚠ CAUTION

This operation overwrites the design data after cleanup on the original design data. Save the original design data in floppy disk if necessary.

<Setting and Screen Display>

- When design data number is selected



① Design data number

② Design name (*1)

*1 : Design name is displayed only when a design name is assigned to the design data.
Design name of up to 8 characters may be displayed.

- When design data is edited

① Stitch length of the stitch data, subject to cleanup

*1 : In the example shown above, stitch length under 0.4 mm (0.1 - 0.3 mm) is processed.

<Required Setting Items>

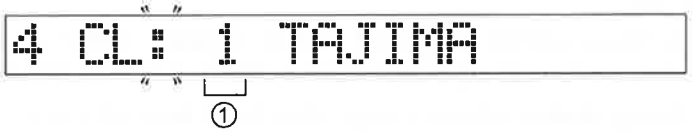
Setting Item	Setting Range	Setting Range
Design data number (memory)	1 to 99	-
Stitch length of stitch data, subject to cleanup	0.4 mm to 0.9 mm	0.1 mm

4-4-1. Procedure

1. Select the data edit (cleanup) function.

Press the data edit key to display the screen as shown below.

Press the [SET] key to decide the selection.



① The screen displays the smallest number among design data numbers registered in memory.

2. Select a design data number to be edited.

Select a design data number by turning the jog dial. [Ex.: 5 (SAKURA)]

Press the [SET] key to decide the selection.

3. Select stitch length of stitch data to be cleaned up.

Select stitch length of stitch data to be cleaned up by turning the jog dial. [Ex.: 0.6 (mm)]

Press the [SET] key to decide the selection.

This completes the setting.

NOTE: When performing other setting(s)/operation(s), press the corresponding menu key(s)/function key(s).

When pressing the E key, the screen returns to the "normal display" (p.2-11).

5. FLOPPY DISK OPERATION

⚠ CAUTION

- **Do not turn OFF the power during floppy disk processing (save, delete, format).**
  If the power supply is turned OFF or a power failure occurs during processing, part or all of design data in the floppy disk will be damaged.
- **If a floppy disk in which design data have been saved is initialized, all design data in the disk will be deleted.**

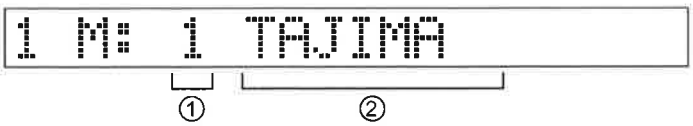
5-1. Floppy Disk Processing (Save)

This operation saves design data registered in memory to a floppy disk (FD).

Menu Key	Screen No.
	1

<Setting and Screen Display>

• When selecting memory design data number

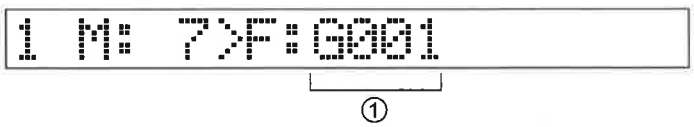


① Design data number.

② Design name (*1)

***1 :** Design name is displayed only when a design name is assigned to the design data

•When selecting design data number in a floppy disk



① Design data number

•When registering design name

① Design data number (floppy disk)

Design name (*2)

*2 : Up to 8 characters can be set.

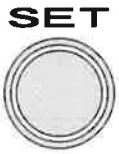
<Required Setting Items>

Setting Item	Setting Range
Design data number (memory)	1 to 99
Design data number (floppy disk)	2DD: 1 to 111 2HD: 1 to 223
Design name	0 to 9, A to Z (Max. 8 characters)

5-1-1. Procedure

1. Set a floppy disk.
   Insert a floppy disk in the floppy disk drive (FDD) (p.2-5).
2. Press the floppy disk processing key to display the screen as shown below.

Press the floppy disk processing key to display the screen title as shown below.

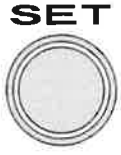


Press the [SET] key to decide the selection.

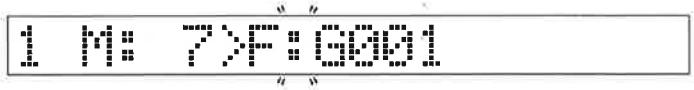
① The screen displays the smallest design number among the design numbers registered in memory.

3. Select the design data number to be saved to the floppy disk.

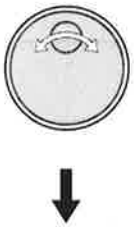
Select design data number by turning the jog dial [ex.: 7 (SAKURA)].



Press the [SET] key to decide the selection.



4. Set a design data number to be saved to the floppy disk.



Select design data number by turning the jog dial [ex.: G003].

Press the [SET] key to decide the selection.

5. Set a design name to be saved to the floppy disk [ex.: INU].

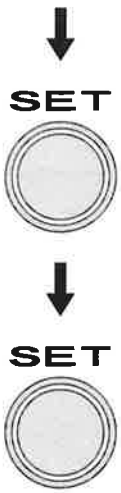
Select "I" by turning the jog dial.

Press the [SET] key to decide the selection.

Select "N" by turning the jog dial.

Press the [SET] key to decide the selection.

Select "U" by turning the jog dial.



Press the [SET] key to decide the selection.

Press the [SET] key to decide the selection.

① Blinks while the design data is being saved.

On completion of saving and the screen as shown below is displayed.

NOTE: When performing other setting(s)/operation(s), press the corresponding menu key(s)/function key(s).

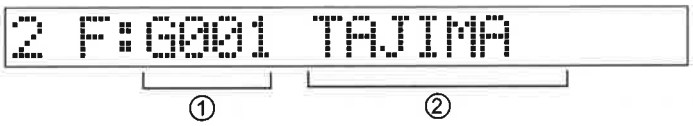
When pressing the key, the screen returns to the "normal display" (p.2-11).

5-2. Floppy Disk Processing (Delete)

This operation deletes design data stored in a floppy disk in units of a design.

Menu Key	Screen No.
	2

<Setting and Screen Display>



① Design data number

② Design name (*1)

*1 : Design name is displayed only when a design name is assigned to the design data.
Design name of up to 8 characters may be displayed.

<Required Setting Item>

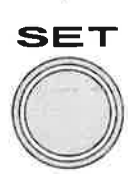
Setting Item	Setting Range
Design data number (floppy disk)	2DD: 1 to 111 2HD: 1 to 223

NOTE : Even within the range indicated above, setting a design data number that is not registered in the floppy disk is not possible.

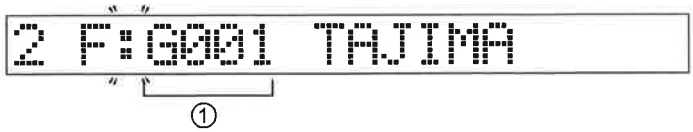
5-2-1. Procedure

1. Set a floppy disk.
   Insert a floppy disk in the floppy disk drive (FDD) (p.2-5).
2. Select the Floppy Disk Processing (Delete) function.

Press the edit key to display the screen title as shown below.



Press the [SET] key to decide the selection.



① The screen displays the smallest design number among the design numbers registered in the floppy disk.

3. Select the design data to be deleted.

Select the design data number by turning the jog dial [ex.: 18 (KUJIRA)].

Press the [SET] key to decide the selection.

On completion of design data deletion, the screen as shown below is displayed.

NOTE: When performing other setting(s)/operation(s), press the corresponding menu key(s)/function key(s).

When pressing the key, the screen returns to the "normal display" (p.2-11).

5-3. Floppy Disk Processing (Format)

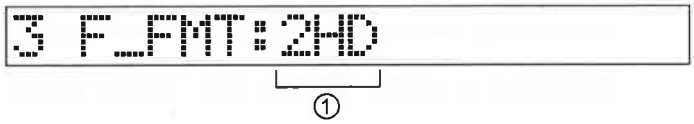
This operation formats a floppy disk so that it can be used with the machine.

Menu Key	Screen No.
	3

⚠ CAUTION

- **Although a floppy disk other than TAJIMA disks can be used with the machine when it is formatted by this function, TAJIMA does not warrant the quality of the data saved to such a floppy disk.**
- **If a floppy disk in which design data have been saved is formatted, all design data in the floppy disk will be lost.**

<Setting and Screen Display>



① Floppy disk type

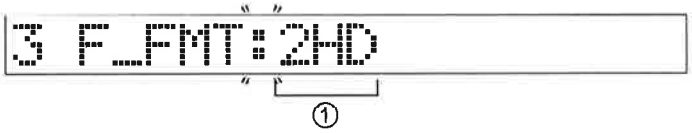
<Required Setting Item>

Setting Item	Setting Range
Floppy disk type	2DD, 2HD

5-3-1. Procedure

1. Set a floppy disk.
   Insert a floppy disk in the floppy disk drive (FDD) (p.2-5).
2. Select the Floppy Disk Processing (format) function.

Press the data edit key to display the screen title as shown below.



① Displays the presently selected floppy disk type.

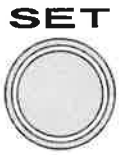
3. Select the type of the floppy disk to be formatted.

Select floppy disk type by turning the jog dial [ex.: 2DD].

Press the [SET] key to decide the selection.

NOTE: An alert is given in buzzer sound.

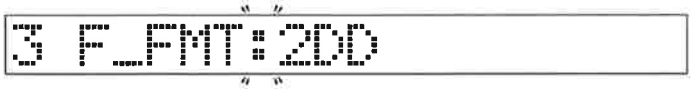
4. Execute formatting.



Press the [SET] key to execute format of a floppy disk.

① Progress of format is indicated by symbols " ".

On completion of format, the display will change as shown below.



NOTE: When performing other setting(s)/operation(s), press the corresponding menu key(s)/function key(s).

When pressing the key, the screen returns to the "normal display" (p.2-11).

CHAPTER 4 MACHINE OPERATION

1. MANUAL OPERATION

1-1. Manual Color Change

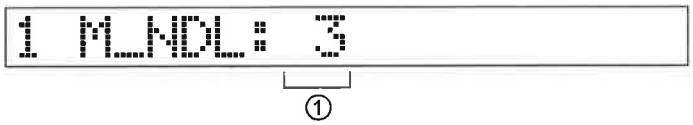
This operation slides the needle bar case manually for color change.

Menu Key	Screen No.
	1

⚠ CAUTION

When performing this operation, do not put your hands near the needle bar case since it slides to change colors. If your hand is near the needle bar case, you may be injured by the needle bar case.

<Setting and Screen Display>



① Needle bar number

<Required Setting Item>

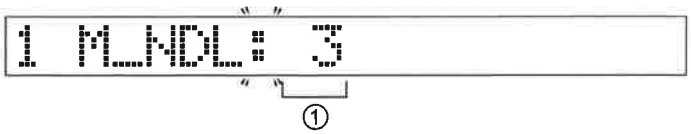
Setting Item	Setting Range
Needle bar number	1 to 15 (*1)

* 1 : It differs depending on the specification of the machine.

1-1-1. Procedure

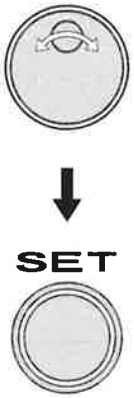
1. Select the Manual Color Change function.

Press the Menu Key D to display screen title as shown below.

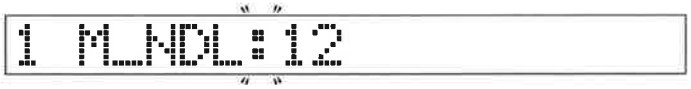


① Displays the presently selected needle bar number.

2. Execute manual color change.



Select needle bar number by turning the jog dial [ex.: 12].



Press the [SET] key to execute manual color change.
The needle bar will slide to perform color change.

① This symbol lights/turns off while the needle bar case is sliding to change colors. (It differs depending on the timing of pressing the [SET] key.

On completion of color change operation, the screen as shown below is displayed.

NOTE: When performing other setting(s)/operation(s), press the corresponding menu key(s)/function key(s).

When pressing the key, the screen returns to the "normal display" (p.2-11).

1-2. Manual Thread Trimming

This operation trims the thread manually using the ATH (Automatic Thread Trimming and Holding device).

Menu Key	Screen No.
	2

⚠ CAUTION

- **When performing this operation, do not put your hands under the needle or on the machine table. If your hand is under the needle or on the machine table, you may be injured by the needle or the frame which moves during trimming.**
- **The ATH starts operating immediately when you press the [SET] key after selecting the manual thread trimming operation.**

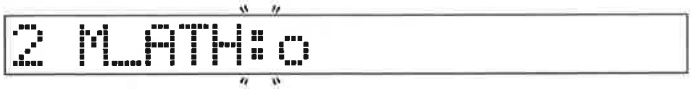
1-2-1. Procedure

1. Select Manual Thread Trimming function.

Press the Menu Key D to display screen title as shown below.

2. Execute manual thread trimming.

Select "○" by turning the jog dial.



NOTE: An alert is given in buzzer sound.

Press the [SET] key to execute manual thread trimming.
ATH will operate to trim thread.

On completion of thread trimming operation, the screen return to the "normal display" (p.2-11).

NOTE: Actual screen display differs depending on the contents of settings.

1-3. Manual Origin Return

This operation returns the frame manually from the present position to the origin (design start position) (*1).

Menu Key	Screen No.
	3

* 1 : Design start position is the position where the machine is started or frame forward is performed for the first time after inputting the data. If the "automatic offset" (p.6-18) is set, however, the "offset start position" (p.6-18, p.8-5) is set as the origin.

⚠ CAUTION

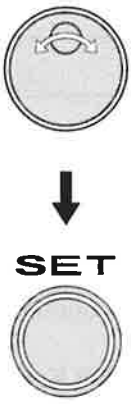
- **When performing this operation, do not put your hands on the machine table. If your hand is on the machine table, you may be injured due to frame movements.**
- **The frame starts moving immediately when you press the [SET] key after selecting the manual origin return operation.**

1-3-1. Procedure

1. Select the Manual Origin Return function.

Press the Menu Key D to display screen title as shown below.

2. Execute manual origin return.



Select "○" by turning the jog dial.

NOTE: An alarm is given in buzzer sound.

Press the [SET] key to execute manual origin return.
The embroidery frame will move to the origin.

On completion of origin return operation, the screen returns to the "normal display" (p.2-11).

NOTE: Actual screen display differs depending on the contents of settings.

1-4. Manual Offset

Menu Key	Screen No.
	4

The manual offset operation returns the embroidery frame to the previously located position after manual frame travel (p.4-10) or in manual origin return (p.4-4) operation.

NOTE : For the outline of manual offset, refer to p.8-5.

⚠ CAUTION

- **When performing this operation, do not put your hands on the machine table. If your hand is on the machine table, you may be injured due to frame movements.**
- **The frame starts moving immediately when you press the [SET] key after selecting the manual offset operation.**

1-4-1. Procedure

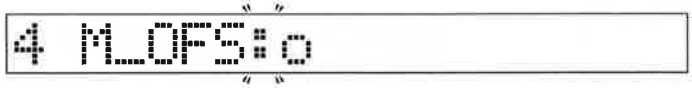
1. Select the Manual Offset function.

Press the Menu Key D to display screen title as shown below.

2. Execute manual offset.

SET

Select "□" by turning the jog dial.



NOTE: An alarm is given in buzzer sound.

Press the [SET] key to perform manual offset operation. The embroidery frame returns to the position where it was located before manual frame travel or manual origin return operation.

On completion of manual offset, the screen returns to the normal display (p.2-11).

NOTE: Actual screen display differs depending on the contents of settings.

1-5. Trace

Menu Key	Screen No.
	5

This operation moves the embroidery frame along the range of the design data which has been set. Using this operation, it is possible to check the size of the design and the start position in reference to the material.

NOTE : For the outline of trace, refer to p.8-8.

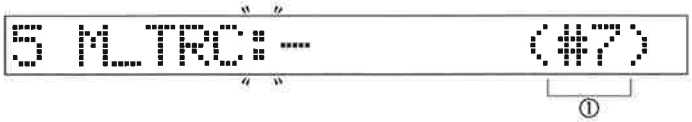
⚠ CAUTION

- **When performing this operation, do not put your hands on the machine table. If your hand is on the machine table, you may be injured due to frame movements.**
- **The frame starts moving immediately when you press the [SET] key after selecting the trace operation.**

1-5-1. Procedure

1. Select the Trace function.

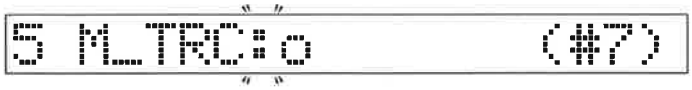
Press the Menu Key D to display screen title as shown below.



① The current needle position will be displayed.

2. Execute the trace operation.

Select "□" by turning the jog dial.



NOTE: An alarm is given in buzzer sound.

Press the [SET] key to perform trace operation.
The embroidery frame moves along maximum embroidery range of the design data.
On completion of tracing, the screen returns to the normal state display.

NOTE: When performing other setting(s)/operation(s), press the corresponding menu key(s)/function key(s).

When pressing the E key, the screen returns to the "normal display" (p.2-11).

1-6. Manual Lubrication (Option)

Menu Key	Screen No.
	6

This operation performs lubrication besides the automatic lubrication system (p.7-7) performed at the preset lubrication cycle.

NOTE 1: Performing manual lubrication will reset the number of remaining stitches up to performing automatic lubrication (p.4-19).

NOTE 2: Manual lubrication can be performed regardless of automatic lubrication system "Yes/No" setting.

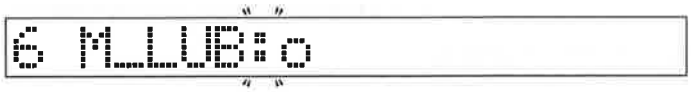
1-6-1. Procedure

1. Select the manual lubrication function.

Press the Menu Key D to display screen title as shown below.

2. Execute manual lubrication.

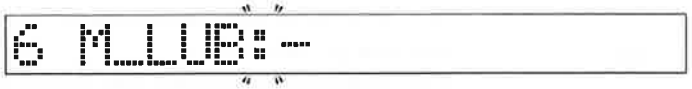
Select "□" by turning the jog dial.



NOTE: An alarm is given in buzzer sound.

Press the [SET] key to perform manual lubrication.
The lubricator lump will operate.

On completion of manual lubrication, the screen as shown below is displayed.



NOTE: When performing other setting(s)/operation(s), press the corresponding menu key(s)/function key(s).

When pressing the key, the screen returns to the "normal display" (p.2-11).

1-7. Table Up/Down (TMFXV-C)

This operation lifts and lowers the machine sub-table.

Menu Key	Screen No.
F6	1

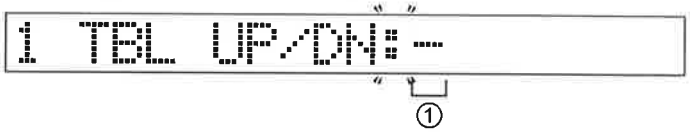
NOTE 1: If "Yes" is not set for sub table up/down setting (p.7-3), the screen is not displayed.

NOTE 2: Sub-table up/down operation is possible when the machine stops running and the Y-axis driving section is positioned at the rearmost.

⚠ CAUTION

Before attempting to lift or lower the sub-table, thoroughly check the safety around the machine.

<Setting and Screen Display>



① Operation status of sub-table up/down

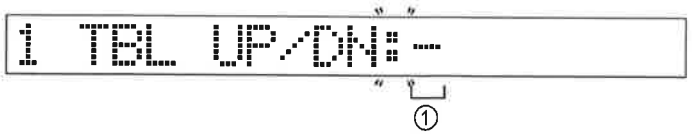
<Required Setting Item>

Setting Item	Setting Range
Operation status of up/down	O: Possible -: Not possible

1-7-1. Procedure

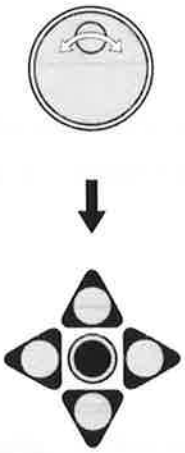
1. Select the sub-table up/down function.

Press the F6 key to display the screen title as shown below.

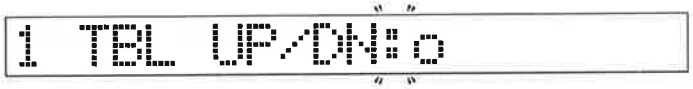


① Displays the presently selected operation status.

2. Execute sub-table up/down operation.



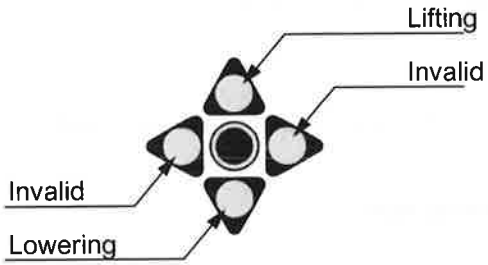
Select "□" by turning the jog dial.



Press the manual frame travel keys to lift or lower the sub-table. The sub-table is lifted or lowered within the range limited by the upper and lower limit switches of the sub-table lifter only while the manual travel key is pressed.

NOTE 1: An alarm sound is given during lifting or lowering the sub-table.

NOTE 2: The relation between the manual frame travel keys and the sub-table up/down operation is shown below.



NOTE 3: When performing other setting(s)/operation(s), press the corresponding menu key(s)/function key(s).

When pressing the key, the screen returns to the "normal display" (p.2-11).

1-8. Manual Frame Traveling

This operation moves the embroidery frame manually to the position as desired.

Two types of operation methods to move the frame manually are provided as indicated below.

- To use the manual frame travel keys
- To use the jog dial/jog shuttle

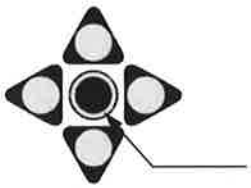
⚠ CAUTION

When performing this operation, do not put your hands on the machine table. If your hand is on the machine table, you may be injured due to the moving frame.

1-8-1. Procedure

<Moving the Frame Using the Manual Frame Travel Keys>

1. Select the frame travel speed.



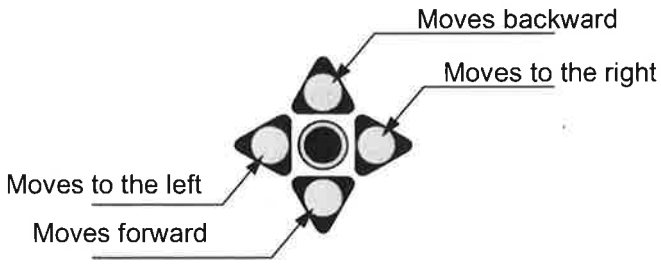
Press the center part of manual frame travel keys to change the frame travel speed.

"High speed/low speed" switches every time this key is pressed.

2. Move the frame.

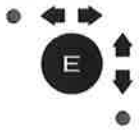
Move the frame using the manual frame travel key(s).

NOTE: The relation between the manual frame travel keys and the direction of frame travel is shown as below.



<Moving the Frame Using the Jog Dial/Jog Shuttle>

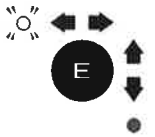
1. Select the travel direction.

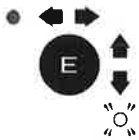


Press the manual frame travel mode key to select the frame travel direction (X/Y).

"X/Y" switches every time the manual frame travel mode key is pressed.

NOTE: The relation between lighting of the indicator lamp of the manual frame travel mode key and the frame travel direction "X/Y" is shown as below.


X-direction (L/R)


Y-direction (Fr/Rr)

2. Move the frame.

- **Frame travel by turning the jog dial (low speed)**

Move the frame in low speed by turning the jog dial.

NOTE: The relation between the jog dial operation and the frame travel direction is shown as below.

Selected direction / Jog dial turning direction	X-direction	Y-direction
Clockwise	Rightward	Backward
Counterclockwise	Leftward	Forward

- Frame travel by turning the jog shuttle (high speed)

Move the frame in high speed by turning the jog shuttle.

NOTE: The relation between the jog shuttle operation and the frame travel direction is shown as below.

Selected direction / Jog shuttle turning direction	X-direction	Y-direction
Clockwise	Rightward	Backward
Counterclockwise	Leftward	Forward

NOTE : To cancel the manual frame travel mode, press the menu key or the function key ("X/Y" lamps are unlit).

1-9. Frame Back/Forward Operation

Menu Key	Screen No.
	3

This operation performs frame back / forward manually.
There are two methods to perform frame back / forward.

- In stop code units
- By designated number of stitches

⚠ CAUTION

- **When performing this operation, do not put your hands on the machine table. If your hand is on the machine table, you may be injured due to the moving frame.**
- **The frame starts moving immediately when you press the [SET] key after selecting the frame back/forward in stop code units operation.**

<Setting and Screen Display>

- When setting frame back / forward

① Frame back / forward

- When executing frame back / forward in stop code units and by designated number of stitches

① Executing method of frame back / forward

NOTE :C: Frame back / forward in stop code units
Number of stitches: Frame back / forward by designated number of stitches

<Required Setting Items>

Setting Item	Setting Range
Frame back / forward	B (Frame back) F (Frame forward)
Executing method of frame back (FB) / forward (FF)	Stop code units: C
	Number of stitches FB: 1 - S (*1) FF: 1 - E (*1)

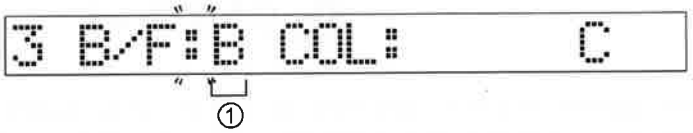
* 1 : S: Number of stitches from the present position to the start position
E: Number of stitches from the present position to the end position

1-9-1. Procedure

<Frame back / forward in stop code units>

1. Select the Frame Back/Forward function.

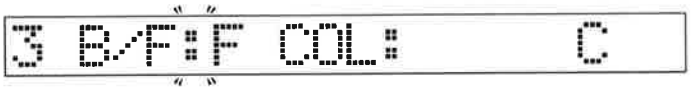
Press the Menu Key C to display the screen title as shown below.



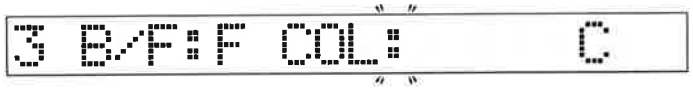
① Display the presently set frame back / forward setting.

2. Set frame back / forward.

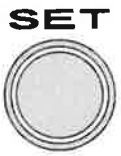
Select "Frame back / frame forward" by turning the jog dial [Ex.: F (frame forward)].



Press the [SET] key to decide the selection.



3. Execute frame back / forward in stop code units.



Press the [SET] key to decide the selection.
Frame back / forward in stop code units will start (Frame forward in this example).

On completion of frame forward, the screen will become the "normal display" (p.2-11).

NOTE: Actual screen display differs depending on the contents of settings.

<Frame back / forward by designated number of stitches>

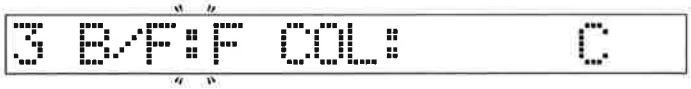
1. Select the Frame Back/Forward function.

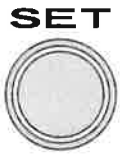
Press the Menu Key C to display the screen title as shown below.

① Display the presently set frame back / forward setting.

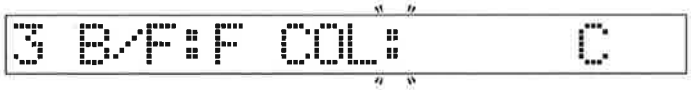
2. Set frame back / frame forward.

Select "Frame back / frame forward" by turning the jog dial [Ex.: F (frame forward)].

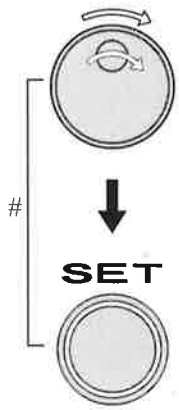




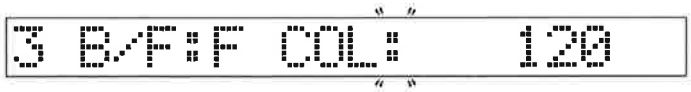
Press the [SET] key to decide the selection.



3. Execute frame back / forward by designated number of stitches.

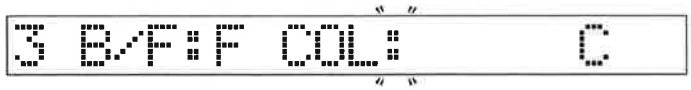


Select number of stitches by turning the jog dial. [Example: 120]



Press the [SET] key to decide the selection.
Frame back / forward by designated number of stitches will start as a batch operation (Frame forward in this example).

On completion of frame forward, the screen will become as shown below.



NOTE: To perform frame back / forward further, repeat # part above.
When performing other setting(s)/operation(s), press the corresponding menu key(s)/function key(s).
When pressing the key, the screen returns to the "normal display" (p.2-11).

1-10. Frame Limit Origin Memory

Menu Key	Screen No.
SET + F6	2

This operation is required when executing software installation, and makes the machine memorize the frame limit origin (0, 0) of the embroidery space.

NOTE : For the outline of frame limit origin memory, refer to p.8-7.

⚠ CAUTION

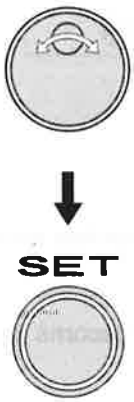
- **When performing this operation, do not put your hands on the machine table. If your hand is on the machine table, you may be injured due to the moving frame.**
- **The frame starts moving immediately when you press the [SET] key after selecting the frame limit origin memory operation.**

1-10-1. Procedure

1. Select the Frame Limit Origin Memory function.

Press the F6 key while holding the [SET] key to display the screen title as shown below.

2. Execute frame limit origin memory operation.



Select "2" by turning the jog dial.

NOTE: An alert is given by a buzzer sound.

Press the [SET] key to execute frame limit origin memory operation. The embroidery frame moves to the frame limit origin, and then returns to the previous position before the operation.

On completion of frame limit origin memory operation, the screen is displayed as shown below.

NOTE: When performing other setting(s)/operation(s), press the corresponding menu key(s)/function key(s).

When pressing the key, the screen returns to the "normal display" (p.2-11).

1-11. Power Resume

Menu Key	Screen No.
SET + F6	1

This operation moves the embroidery frame to the position where the embroidering has been interrupted by power shut-off during operation to avoid design displacement.

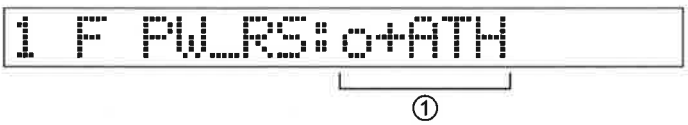
When the power is turned on again in case the power has been shut off during operation, code number "2E3" is displayed. Follow the procedure as shown below to execute "Power Resume" operation.

NOTE : To return the frame to the previous position correctly, the "frame limit origin memory" (p.4-15) must have been set.

⚠ CAUTION

When performing this operation, do not place your hands under the needle or on the machine table. Otherwise, you could get injured due to the moving needle or the frame.

<Setting and Screen Display>



① Power resume operation

<Required Setting Items>

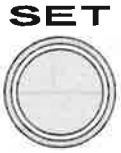
Setting Item	Setting Range
Power resume operation	- (Does not execute power resume operation) O(Executes power resume operation) O + ATH (Executes power resume operation with thread trimming)

1-11-1. Procedure

1. Turn the power switch ON.

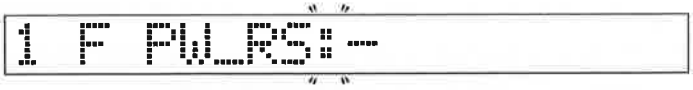
Error code number "2E3" is displayed.

2. Reset the error code number.



Press the [SET] key to clear the error display.

The power resume screen is displayed.

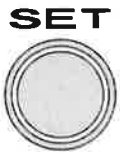


NOTE: To display the power resume screen in other case than power shut-off, press [F6] while pressing the SET key.

3. Execute power resume operation.

Select power resume operation [ex.: O+ATH (Power resume after thread trimming)].

NOTE: If the selection is other than "-" (Does not execute power resume operation), an alert is given by buzzer sound.



Press the [SET] key to perform power resume operation.
The embroidery frame moves.

After completion of power resume operation, the screen will become "normal display" (p.2-11).

NOTE: Actual display differs depending on the contents of settings.

2. CONFIRMATION OPERATION

2-1. Total Stitch Counter/Design Timer

Menu Key	Screen No.
	2

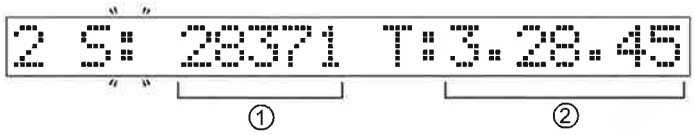
This operation displays the total number of stitches having been sewn and the time used for stitching one design.
The stitch counter can be reset any desired time.
The design timer is automatically reset when the machine starts operating after finishing a design.

2-1-1. Procedure

<Display of Stitch Counter/Design Timer>

1. Select the Total Stitch Counter/Design Timer function.

Press the Menu Key C to display the screen title as shown below.



① Total number of stitches

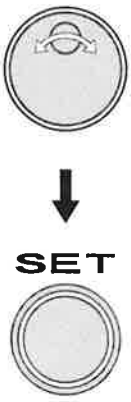
② Design time

<Resetting the Stitch Counter>

1. Select the Total Stitch Counter/Design Timer function.

Press the Menu Key C to display the screen title as shown below.

2. Reset the stitch counter.



Select "0" by turning the jog dial.

Press the [SET] key to decide the selection.
The total number of stitches is reset.

NOTE: When performing other setting(s)/operation(s), press the corresponding menu key(s)/function key(s).

When pressing the E key, the screen returns to the "normal display" (p.2-11).

2-2. Confirmation of Remaining Stitches for Lubrication

Menu Key	Screen No.
	6

This operation confirms the remaining stitches until automatic lubrication starts.

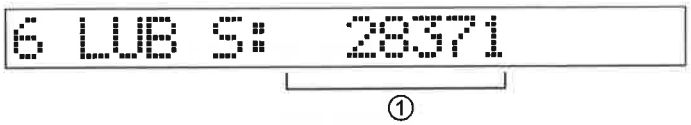
NOTE 1: The number of remaining stitches does not change when automatic lubrication system (option) is set to "Not used" (p.7-7).

NOTE 2: One rotation of the main shaft is counted as one stitch for the reduction of the number of remaining stitches.

2-2-1. Procedure

1. Press the Number of Stitches until Lubrication Starts function.

Press the Menu Key C to display the screen title as shown below.

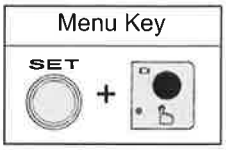


① Number of remaining stitches

NOTE: When performing other setting(s)/operation(s), press the corresponding menu key(s)/function key(s).

When pressing the E key, the screen returns to the "normal display" (p.2-11).

2-3. Confirmation Mode



This mode allows to confirm the contents of current settings without making modification. The contents that can be confirmed are as shown below.

- **Data input** **•Needle bar selection**
- **Software frame limit** **•Data conversion**
- **Automatic offset**

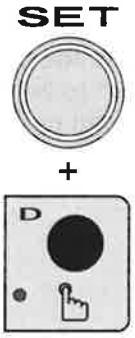
NOTE : Switching to the confirmation mode is possible only in the "Normal display" (p.2-11) state.

2-3-1. Procedure

NOTE : Only explanations for "Data input", "Needle bar selection", and "Data conversion" are described here. To confirm other settings, execute confirmation referring to this item.

<Confirmation of the Setting for Data Input>

1. Switch to the confirmation mode.

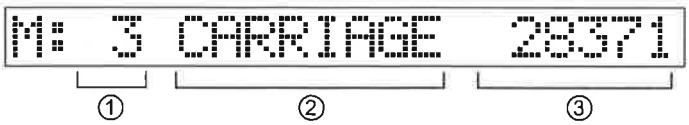


Press the Menu Key D while holding the [SET] key so that the indicator lamp of the Menu Key D flashes. ⟶

2. Confirm the data input setting.

Press the Menu Key A. ⟶ The present input status is displayed.

•Data input/memory operation status



① Design data number

② Design name (max. 8 characters)

③ Number of stitches of the present design data

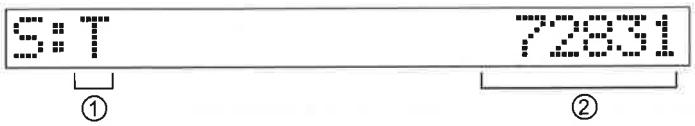
•Memory writing operation status (serial ⟶ memory)

① Code format

② Design data number

③ The remaining memory capacity before memory writing

• **Tape operation status**



① Code format
T: Tajima, B: Barudan, Z: ZSK

② Remaining memory capacity (number of stitches)

3. Cancel the confirmation mode.

Press the Menu Key D to cancel the confirmation mode.

NOTE: To confirm other items continuously, press the [SET] key in stead of the Menu Key D to keep the confirmation mode to make the "Normal display" (p.2-11). Then, press the key for the item to be confirmed next.

When canceling the confirmation mode, the screen returns to the "Normal display" (p.2-11).

NOTE 1: Actual display differs depending on the contents of settings.

NOTE 2: It is also possible to cancel the confirmation mode by pressing the key.

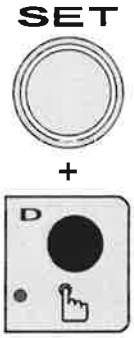
<Confirming the Needle Bar Selection>

NOTE : Even if the color change operation is set to "Manual", it is possible to confirm the setting for needle bar selection.

[Example]

When the third step of 12 preset steps is currently selected

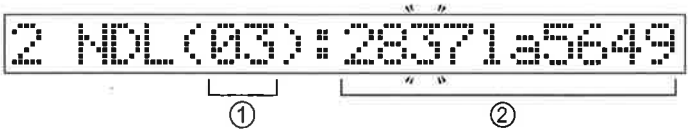
1. Switch to the confirmation mode.



Press the Menu Key D while holding the [SET] key so that the indicator lamp of the Menu Key D flashes. ⟶

2. Select the needle bar selection.

Press the Menu Key B to display the screen title as shown below.



① Step number

② Needle bar number (displays 10 steps max.)

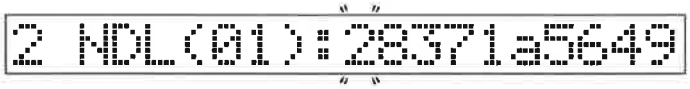
NOTE 1: Needle bar numbers 10 and larger are displayed as follows:
10 → a 11 → b 12 → c 13 → d 14 → e 15 → f

NOTE 2: The needle bar No. corresponding to the current step No. flashes.

3. Confirm the setting for needle bar selection.

Turn the jog dial.

[Ex.: Turning counterclockwise]
The flashing digit moves to the left (up to step 1).



[Ex.: Turning clockwise]
The flashing digit moves to the right (up to step 12).

4. Cancel the confirmation mode.

Press the Menu Key D to cancel the confirmation mode.

NOTE: To confirm other items continuously, press the [SET] key in stead of the Menu Key D to keep the confirmation mode to make the "Normal display" (p.2-11). Then, press the key for the item to be confirmed next.

When canceling the confirmation mode, the screen returns to the "Normal display" (p.2-11).

NOTE 1: Actual display differs depending on the contents of settings.

NOTE 2: It is also possible to cancel the confirmation mode by pressing the E key.

CHAPTER 5 MACHINE SETTING

1. MAIN SHAFT RPM

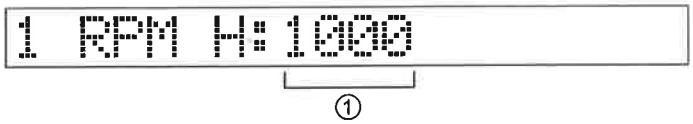
1-1. Maximum RPM

Menu Key	Screen No.
	1

This function sets the maximum rpm of the main shaft.

NOTE : The maximum rpm cannot exceed the set value of the "Maximum RPM Limit" (p.5-5).

<Setting and Screen Display>



① Maximum rpm

<Required Setting Item>

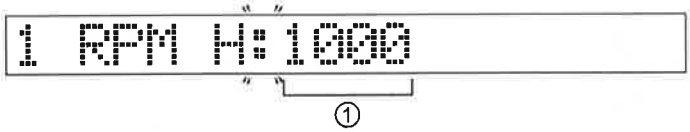
Setting Item	Setting Range	Setting Unit
Maximum rpm	250 to 1000 rpm	10 rpm

NOTE : The adequate set value for the maximum rpm differs depending on the machine specification and embroidery condition (frames to be used, types of threads, etc.).

1-1-1. Procedure

1. Select the maximum rpm function.

Press the Menu Key C to display the screen title as shown below.



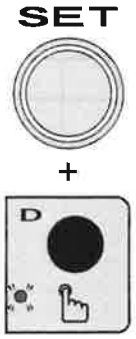
① Displays the presently selected rpm.

2. Set the maximum rpm.

Select rpm by turning the jog dial. [ex.: 900 (rpm)]

<Confirmation of the Setting for Data Conversion>

1. Switch to the confirmation mode.



Press the Menu Key D while holding the [SET] key so that the indicator lamp of the Menu Key D flashes.

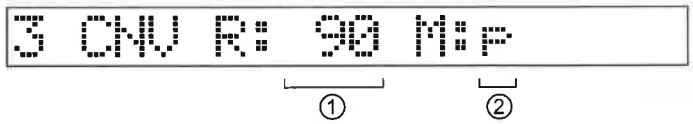
2. Select the data conversion.

Press the Menu Key B to display the screen title as shown below.

① X scale value

② Y scale value

Press the [SET] key to display the screen title as shown below.



① Rotation angle

② Mirroring

3. Cancel the confirmation mode

Press the Menu Key D to cancel the confirmation mode.

NOTE: To confirm other items continuously, press the [SET] key in stead of the Menu Key D to keep the confirmation mode to make the "Normal display" (p.2-11). Then, press the key for the item to be confirmed next.

When canceling the confirmation mode, the screen returns to the "Normal display (p.2-11).

NOTE 1: Actual display differs depending on the contents of settings.

It is also possible to cancel the confirmation mode by pressing the key.

Press the [SET] key to decide the selection.

This completes the setting.

NOTE: When performing other setting(s)/operation(s), press the corresponding menu key(s)/function key(s).

When pressing the [E] key, the screen returns to the "normal display" (p.2-11).

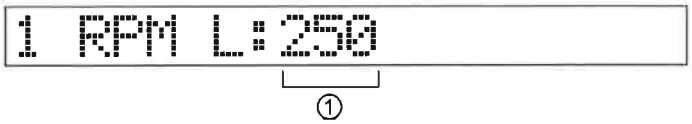
1-2. Low Speed RPM

Menu Key	Screen No.
F2	1

This function set the minimum rpm of the main shaft.

NOTE : The minimum rpm cannot exceed the set value of the "Maximum RPM" (p.5-1).

<Setting and Screen Display>



① Low speed rpm

<Required Setting Item>

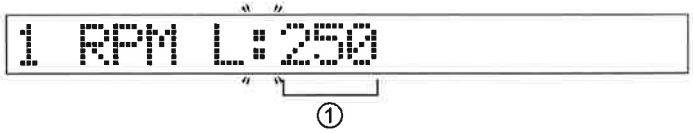
Setting Item	Setting Range	Setting Unit
Low speed rpm	250 to 700 rpm	10rpm

NOTE : The adequate set value for the low speed rpm differs depending on the machine specification and embroidery condition (frames to be used, types of threads, etc.).

1-2-1. Procedure

1. Select the low speed rpm function.

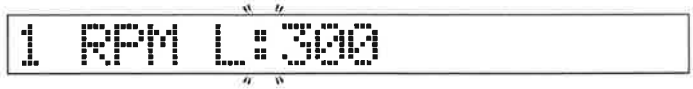
Press the F2 key to display the screen title as shown below.



① Displays the presently selected rpm.

2. Set the minimum rpm.

Select rpm by turning the jog dial. [ex.: 300 (rpm)]



Press the [SET] key to decide the selection.

This completes the setting.

NOTE: When performing other setting(s)/operation(s), press the corresponding menu key(s)/function key(s).

When pressing the E key, the screen returns to the "normal display" (p.2-11).

1-3. Maximum RPM Limit

Menu Key	Screen No.
SET + F2	1

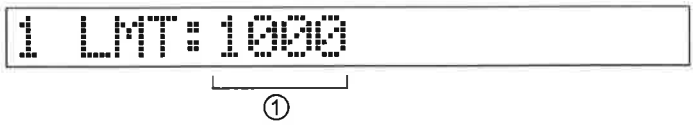
This function sets the upper limit of the main shaft rpm.

NOTE : The main shaft rpm cannot be increased over the maximum rpm limit set by this setting.

⚠ CAUTION

The main shaft rpm limit has been set by TAJIMA considering the structure and operability of the machine. Consult your distributor when changing the maximum rpm limit.

<Setting and Screen Display>



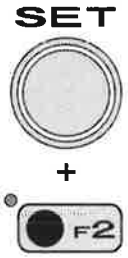
① Limit value for the maximum rpm

<Required Setting Item>

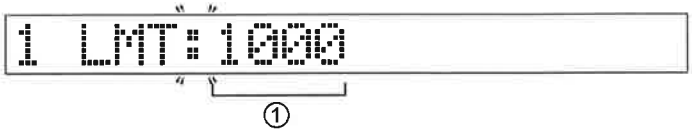
Setting Item	Setting Range	Setting Unit
Limit value for the max. rpm	250 to 1000 rpm	10 rpm

1-3-1. Procedure

1. Select the Maximum RPM Limit function.



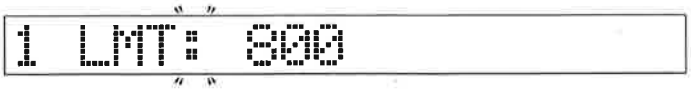
Press the F2 key while holding the [SET] key to display the screen title as shown below.



① Displays the presently selected limit value for the maximum rpm.

2. Set the limit value for the maximum rpm.

Select the limit value for the maximum rpm by turning the jog dial. [ex.: 800 (rpm)].



Press the [SET] key to decide the selection.

This completes the setting.

NOTE: When performing other setting(s)/operation(s), press the corresponding menu key(s)/function key(s).

When pressing the key, the screen returns to the "normal display" (p.2-11).

2. NUMBER OF START INCHING TIMES

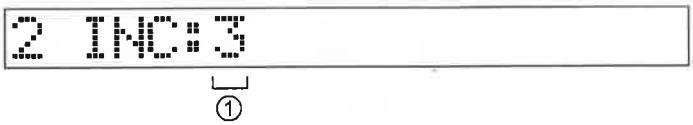
2-1. Number of Start Inching Times

Menu Key	Screen No.
F2	2

This function sets the number of times the main shaft inches at the start of operation.

NOTE : The setting is disregarded at the start of operation after automatic or manual thread trimming.

<Setting and Screen Display>



① Number of start inching times

<Required Setting Item>

Setting Item	Setting Range
Start inching times	0 to 9

2-1-1. Procedure

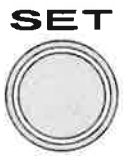
1. **Select the Start Inching Times function.**

Press the F2 key to display the screen title as shown below.

① Displays the presently selected inching times.

2. Set the number of inching times at the start of operation.

Select inching times by turning the jog dial. [ex.: 2].



Press the [SET] key to decide the selection.

This completes the setting.

NOTE: When performing other setting(s)/operation(s), press the corresponding menu key(s)/function key(s).

When pressing the key, the screen returns to the "normal display" (p.2-11).

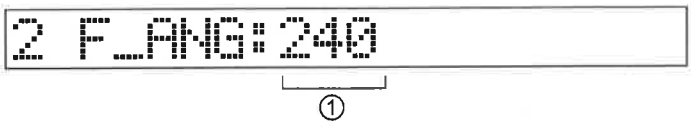
3. FRAME DRIVE

3-1. Frame Drive Start Timing

This function sets the frame drive start timing.

Menu Key	Screen No.
SET + F2	2

<Setting and Screen Display>



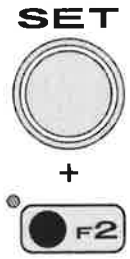
① Frame drive start timing

<Required Setting Item>

Setting Item	Setting Range	Setting Unit
Frame drive start timing	230 to 260°	10°

3-1-1. Procedure

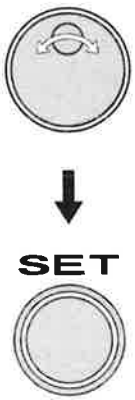
1. Select the Frame Drive Start Timing function.



Press the F2 key while holding the [SET] key to display the screen title as shown below.

① Displays the presently selected timing.

2. Set the frame drive start timing.



Select the timing by turning the jog dial. [Ex.: 250 (°)]

Press the [SET] key to decide the selection.

This completes the setting.

NOTE: When performing other setting(s)/operation(s), press the corresponding menu key(s)/function key(s).

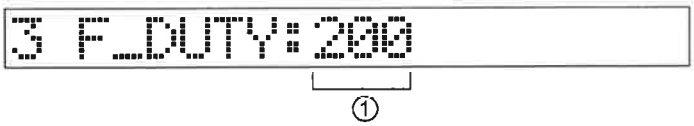
When pressing the  key, the screen returns to the "normal display" (p.2-11).

3-2. Frame Driving Method

This setting changes frame driving method for the embroidery frame. Perform adjustment according to the finish of embroidery.

Menu Key	Screen No.
SET + r2	3

<Setting • Screen Display>



① Frame driving method

<Required Setting Item>

Setting Item	Setting Range
Frame driving method	AUTO: Usual frame driving method 200: Frame driving method for looping-reduction

NOTE 1:The setting value after installing the software is "AUTO".

NOTE 2:Select "200" when looping occurs. At the moment, the setting values of r.p.m. of the main shaft of the machine and frame drive start timing will become as follows:

•R.P.M. of the main shaft of the machine

TMFXV-IIC

High speed: 800 rpm/ Low speed: 500 rpm

TMFXV, V-C

High speed: 850 rpm/ Low speed: 550 rpm

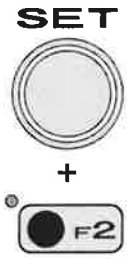
•Frame drive start timing

240° (*1)

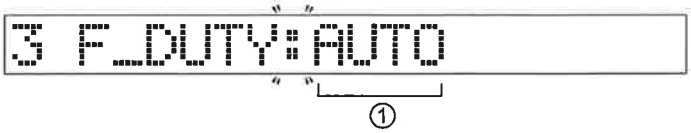
*1 : It is possible to change the timing within the range of 230° to 260°.

3-2-1. Procedure

1. Selecting the frame driving method



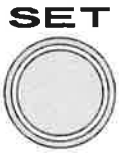
Press the F2 key while pressing the [SET] key to display the screen as shown below.



① The frame driving method currently selected will be displayed.

2. Setting the frame driving method

Select the frame driving method by using the jog dial.
[Example: 200]



Press the [SET] key to decide the selection.

This completes the setting.

NOTE: When performing other setting(s)/operation(s), press the corresponding menu key(s)/function key(s).

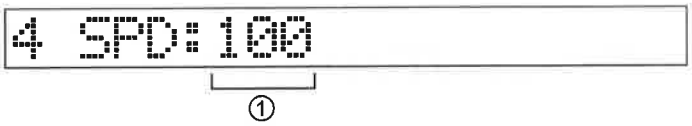
When pressing the key, the screen returns to the "normal display" (p.2-11).

3-3. Frame Travel Speed

Menu Key	Screen No.
F2	4

This function sets the frame travel speed at origin return operation, offset operation, etc.

<Setting and Screen Display>



① Frame travel speed

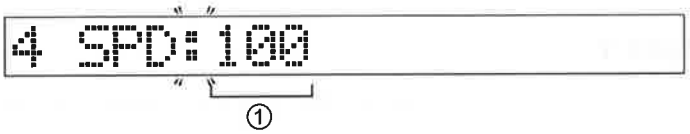
<Required Setting Item>

Setting Item	Setting Range
Frame travel speed	100 / 200 mm/sec

3-3-1. Procedure

1. Select the Frame Travel Speed function.

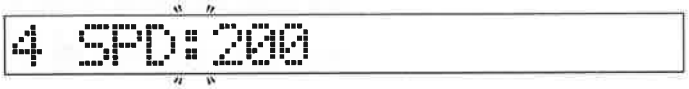
Press the F2 key to display the screen title as shown below.



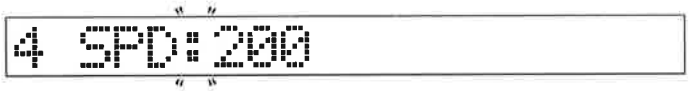
① Displays the presently selected speed.

2. Set the frame travel speed.

Select speed by turning the jog dial. [Ex.: 200 (mm/sec)]



Press the [SET] key to decide the selection.



This completes the setting.

NOTE: When performing other setting(s)/operation(s), press the corresponding menu key(s)/function key(s).

When pressing the key, the screen returns to the "normal display" (p.2-11).

3-4. Frame Back/Forward

Menu Key	Screen No.
	3

This function sets the movement (frame back/frame forward) in case of execution of operation by bar switch (stop) or stop switch (p.2-2, p.2-3) when the machine stops.

<Setting and Screen Display>

① Displays frame back/forward.

<Required Setting Item>

Setting Item	Setting Range
Frame back/forward	B (frame back) F (frame forward)

3-4-1. Procedure

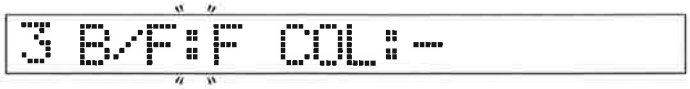
1. Select the Frame Back/Forward function.

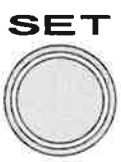
Press the Menu Key C to display the screen title as shown below.

① Displays the present setting for frame back/forward.

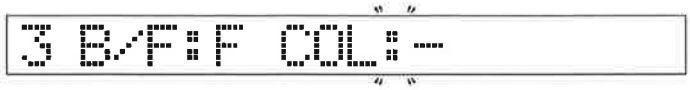
2. Set the frame back/forward.

Select "Frame Back/Forward" by turning the jog dial. [Ex.: F (frame forward)]





Press the [SET] key to decide the selection.



This completes the setting.

NOTE 1: When executing frame back/forward by stop code units subsequently, refer to p.4-12.

NOTE 2: When performing other setting(s)/operation(s), press the corresponding menu key(s)/function key(s).

When pressing the  key, the screen returns to the "normal display" (p.2-11).

3-5. Software Frame Limit

Menu Key	Screen No.
	

This function sets the machine to stop before a needle hits the frame when a design is larger than the frame or when the start position is incorrectly set.

Setting for the software frame limit is set by moving the frame manually in the embroidery range of the frame to be used (square frames, round frames, other frames).

NOTE 1: Setting for the software frame limit during embroidery cannot be made.

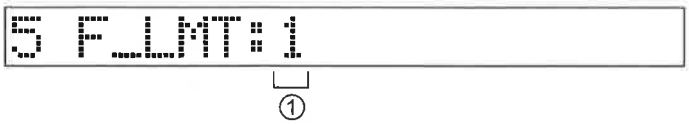
NOTE 2: If inputting other design data, the setting for the software frame limit will become invalid.

⚠ CAUTION

When performing this operation, do not put your hands on the machine table. If your hand is on the machine table, you may be injured due to the moving frame.

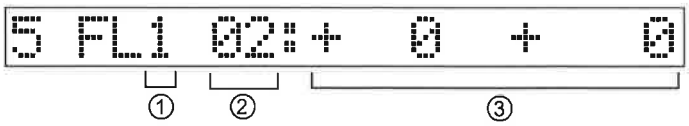
<Setting and Screen Display>

- When selecting frame type



① Frame type

- When setting points



① Frame type

② Number of points

③ Values of the point (coordinates)

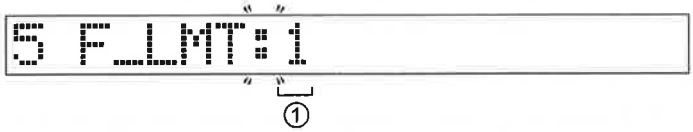
<Required Setting Item>

Setting Item	Setting Range
Frame type (square frame/round frame/ other polygon frame)	1: Square frame, 2: Round frame, 3: Other frame (polygon)
Number of points	Square frame: 2, Round frame: 3, Others: 2 to 30
Values of the point	They differ depending on embroidery range.

3-5-1. Procedure

1. Select the Software Frame Limit function.

Press the F1 key to display the screen title as shown below.

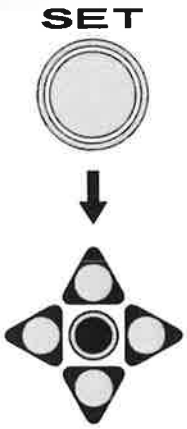


① Displays the presently selected frame type.

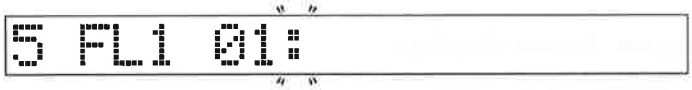
2. Set the points.

<In Case of Square Frame>

• Set the point 1.

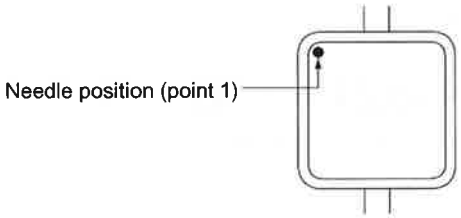


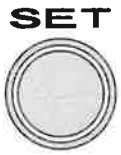
Press the [SET] key to decide the selection.



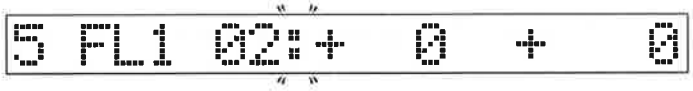
Press the manual frame travel key(s) to set a square part (as desired) of the frame to the needle position.

NOTE: It is also possible to use the jog dial /jog shuttle instead of the manual frame travel key(s). (The same as follows.)



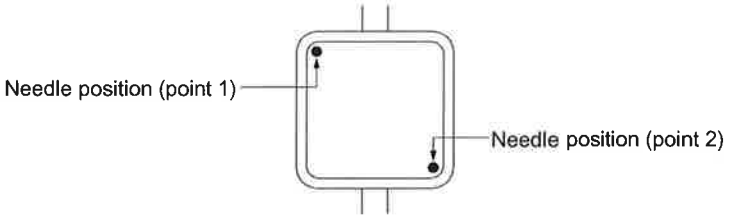


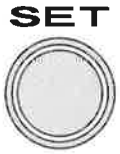
Press the [SET] key to decide the selection.



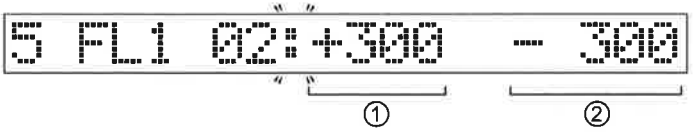
- Set the point 2.

Press the manual frame travel key(s) to set the diagonal square part of the point 1 of the frame to the needle position.



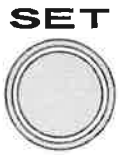


Press the [SET] key to decide the frame position of the point 2.



① Displays the X-coordinate value of the point 2 based on the X-coordinate value of the point 1 as "0" (mm).

② Displays the Y-coordinate value of the point 2 based on the Y-coordinate value of the point 1 as "0" (mm).

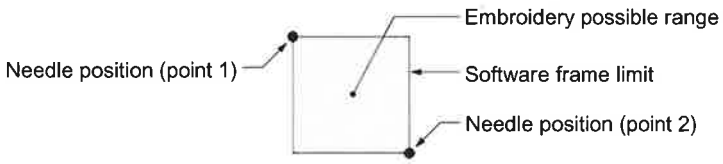


Press the [SET] key to decide the setting for the software frame limit.

This completes the setting. ⟶ The screen becomes "normal display" (p.2-11).

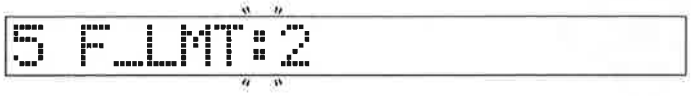
NOTE 1: Actual screen display differs depending on the contents of the setting.

NOTE 2: By the above-described setting, the shape of the software frame limit becomes as shown below.



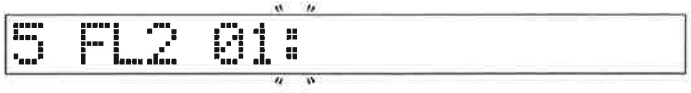
<In Case of Round Frame>

Select "2 (round frame)" by turning the jog dial.



SET

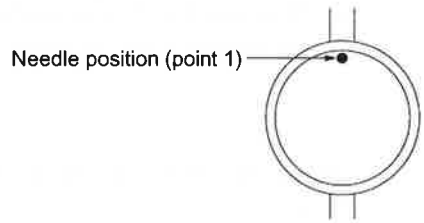
Press the [SET] key to decide the selection.



• Set the point 1.

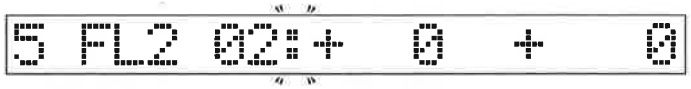
Press the manual frame travel key(s) to set an optional point of the frame to the needle position.

NOTE: It is also possible to use the jog dial /jog shuttle instead of the manual frame travel key(s) (the same as follows).



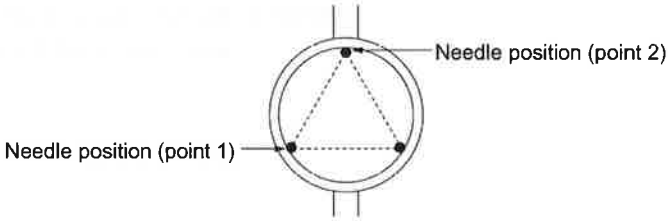
SET

Press the [SET] key to decide the frame position of the point 1.



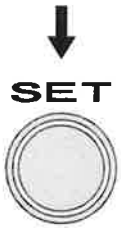
• Set the point 2.

Press the manual frame travel key(s) to set the point 2 (the apex of an equilateral triangle as much as possible) to the needle position.

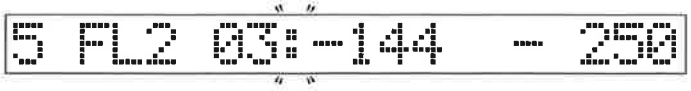


① Displays the X-coordinate value of the point 2 based on the X-coordinate value of the point 1 as "0" (mm).

② Displays the Y-coordinate value of the point 2 based on the Y-coordinate value of the point 1 as "0" (mm).

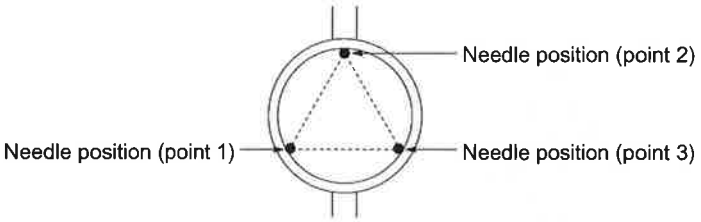


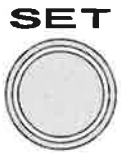
Press the [SET] key to decide the frame position of the point 2.



• Set the point 3.

Press the manual frame travel key(s) to set the point 3 (the apex of an equilateral triangle as much as possible) to the needle position.



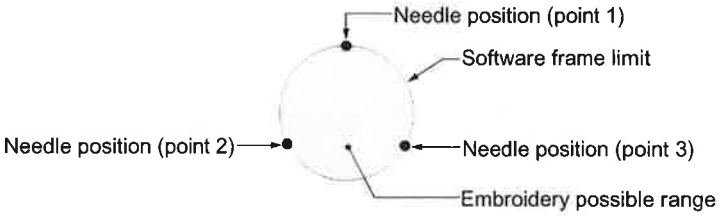


Press the [SET] key to decide the setting for the software frame limit.

This completes the setting. ⟶ The screen becomes "normal display" (p.2-11).

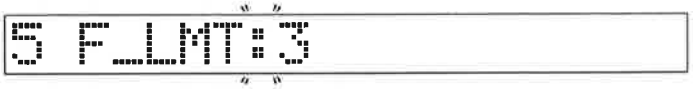
NOTE 1: Actual screen display differs depending on the contents of the settings.

NOTE 2: By the above-described setting, the shape of the software frame limit becomes as shown below.



<In Case of Other Frames>

Select "3 (other frames)" by turning the jog dial.



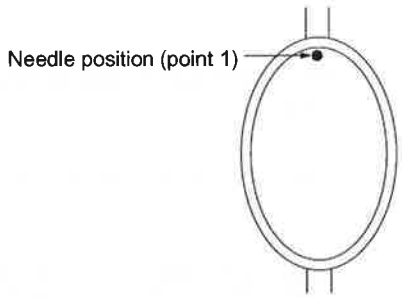
SET

Press the [SET] key to decide the selection.

• Set the point 1.

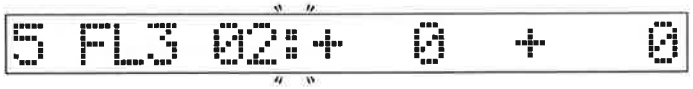
Press the manual frame travel key(s) to set an optional point of the frame to the needle position.

NOTE: It is also possible to use the jog dial /jog shuttle instead of the manual frame travel key(s) (the same as follows).



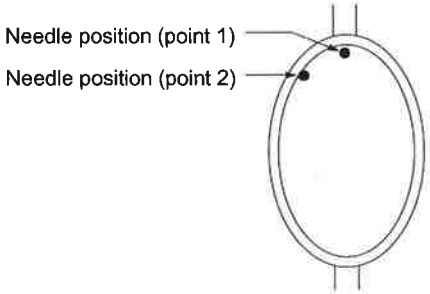
SET

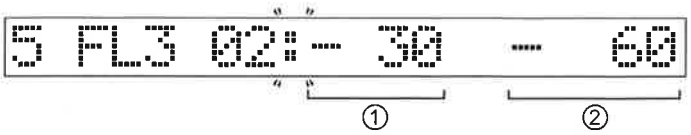
Press the [SET] key to decide the frame position of the point 1.



• Set the point 2.

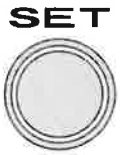
Press the manual frame travel key(s) to set an optional point 2 that is along the frame to the needle position.



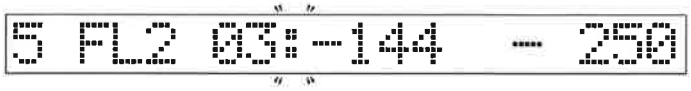


① Displays the X-coordinate value of the point 2 based on the X-coordinate value of the point 1 as "0" (mm).

② Displays the Y-coordinate value of the point 2 based on the Y-coordinate value of the point 1 as "0" (mm).

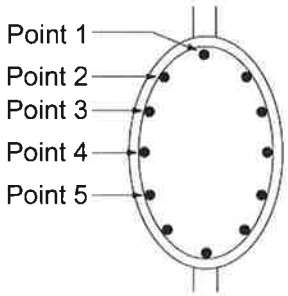


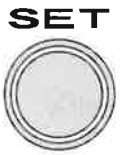
Press the [SET] key to decide the frame position of the point 2.



• Set the points 3 and after.

Repeat to press the  +  keys to set the points 3 and after.



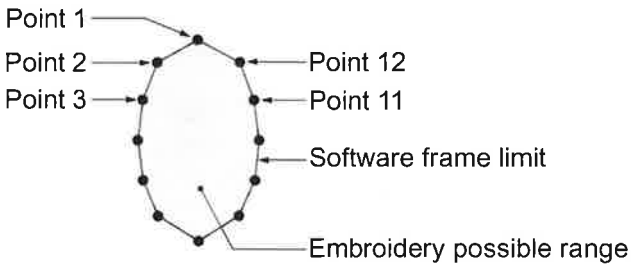


When input of the last point is finished, press the [SET] key to decide the setting for software frame limit.

This completes the setting. ⟶ The screen becomes "normal display" (p.2-11).

NOTE 1: Actual screen display differs depending on the contents of the settings.

NOTE 2: By the above-described setting, the shape of the software frame limit becomes as shown below.



CHAPTER 6 SETTING ON EMBROIDERY

1. THREAD BREAKAGE DETECTION AND THREAD TRIMMING

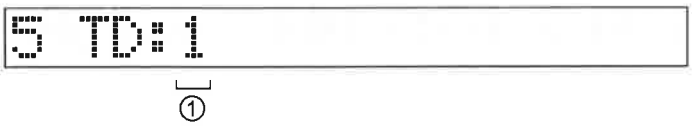
1-1. Upper Thread Breakage Detection

This sets how the breakage of upper thread (how many times of detections of upper thread breakage signal are processed as thread breakage) is detected.

Menu Key	Screen No.
	

NOTE : The thread breakage indicator lamp (red) lights (p.1-11) if upper thread breakage is detected and, at the same time, error code number [291] (p.9-1) is displayed and the machine stops.

<Setting and Screen Display>



① Upper thread breakage detection method

<Required Setting Item>

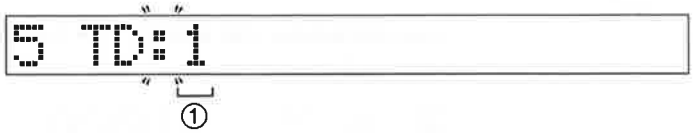
Setting Item	Setting Range
Upper thread breakage detection method	1 to 5: (Detects the breakage of upper thread) (*1) -: (Does not detect the breakage of upper thread)

*** 1 : Setting of 1 to 5**
The function recognizes the breakage of thread if upper thread breakage signal is detected consecutively by the set number of times.

1-1-1. Procedure

1. Select the Upper Thread Breakage Detection setting function.

Press the F2 key to display the screen as shown below.



① Displays the present setting for the upper thread breakage detection method.

2. Set the upper thread breakage detection method.

Select upper thread breakage detection method [ex.: 2 (2 time consecutive detection) by turning the jog dial.

Press the [SET] key to decide the selection.

This completes the setting for Upper Thread Breakage Detection function.

NOTE: When performing other setting(s)/operation(s), press the corresponding menu key(s)/function key(s).

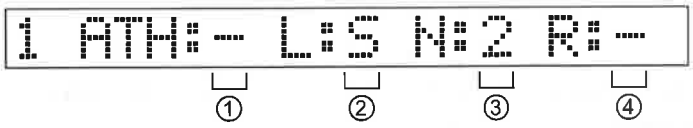
When pressing the key, the screen returns to the "normal display" (p.2-11).

1-2. Automatic Thread Trimming

The function is used to set automatic thread trimming for each color change step.

Menu Key	Screen No.
F3	1

<Setting and Screen Display>



① Setting for the use of the ATH (automatic thread trimming and holding device)

② Thread trimming length

③ Number of start inching times after thread trimming

④ Return stitching at start operation after thread trimming

<Required Setting Items>

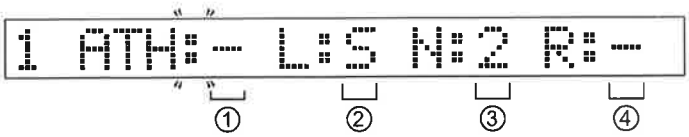
Setting Item	Setting Range
Using method of the ATH	O (used): Performs tie stitching when trimming threads ← (used): Does not perform tie stitching when trimming threads (*1) –: (not used)
Thread trimming length	S (short) M (medium) L (long)
Number of start inching times after thread trimming	2 to 9
Return stitching at start operation after thread trimming	1 (forming 1 stitch) 2 (forming 2 stitches) – (not formed)

*** 1 : Select this mode when stitch data for tie stitching is included in the design data to be used.**

1-2-1. Procedure

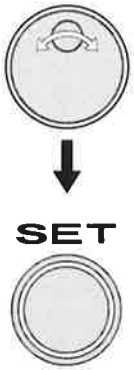
1. Select the automatic thread trimming function.

Press the F3 key to display the screen as shown below.



① to ④: Displays presently set contents.

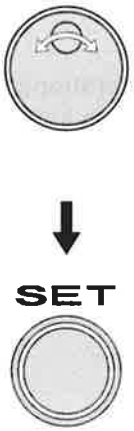
2. Select using method of the ATH.



Select using method of the ATH by turning the jog dial.
[Ex.: O(used): Performs tie stitching when thread is trimmed]

Press the [SET] key to decide the selection.

3. Set the thread trimming length.



Select thread trimming length by turning the jog dial.
[ex.: M (medium)]

Press the [SET] key to decide the selection.

4. Set the number of start inching times after thread trimming.

Select number of start inching times after thread trimming. [ex.: 3]

Press the [SET] key to decide the selection.

5. Set return stitching at start operation after thread trimming.

Select return stitching by turning the jog dial.
[ex.: 2 (forming 2 stitches)]

Press the [SET] key to decide the selection.

This completes the setting.

NOTE: When performing other setting(s)/operation(s), press the corresponding menu key(s)/function key(s).

When pressing the E key, the screen returns to the "normal display" (p.2-11).

2. EMBROIDERY METHOD

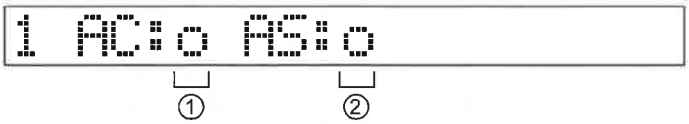
2-1. Automatic Color Change/Automatic Start

This function is used to set color change method (automatic/ manual) and start method (automatic/manual) after color change.

Menu Key	Screen No.
	1

NOTE : Setting for start method is not possible when color change method is set to "manual".

<Setting and Screen Display>



① Color change method

② Start method

<Required Setting Item>

Setting Item	Setting Range
Color change method	O (automatic) – (manual)
Start method	O (automatic: A) (*1) – (manual) > (automatic: B) (:2)

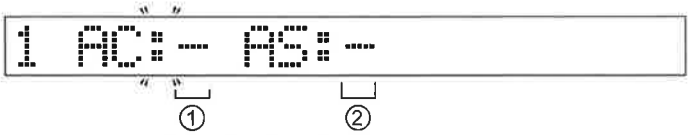
* 1 : Automatic start is performed only when different colors (needle bars) are selected before and behind color change. (When the same color is selected before and behind color change, automatic start will not be performed.)

* 2 : Automatic start is performed even when the same color (needle bar) is selected before and behind color change.

2-1-1. Procedure

1. Select the Automatic Color Change/Automatic Start function.

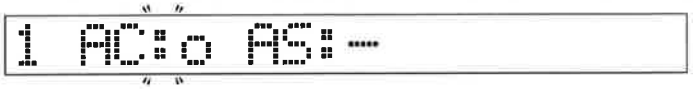
Press the Menu Key B to display the screen as shown below.



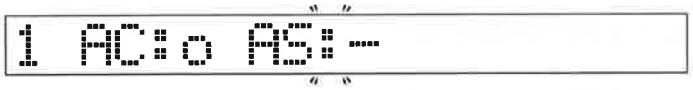
① to ②: Displays presently set contents.

2. Set the color change method.

Select color change method by turning the jog dial. [ex.: O (automatic)]

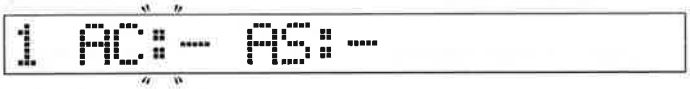


Press the [SET] key to decide the selection.



NOTE: When selecting color change method to "– (manual)", the screen shown below is displayed to complete the setting. When performing other setting(s)/operation(s), press the corresponding menu key(s)/function key(s).

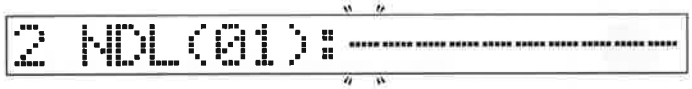
When pressing the key, the screen returns to the "normal display" (p.2-11).



3. Set the start method.

Select start method by turning the jog dial. [ex.: O (automatic)]

Press the [SET] key to decide the selection.



This completes the setting.

NOTE 1: When selecting color change method to "automatic", the screen automatically switches to the screen for "Needle Bar Selection" (p.6-8) regardless of start method (automatic/manual).

NOTE 2: When performing setting(s)/operation(s) other than "Needle Bar Selection", press the corresponding menu key(s)/function key(s).

When pressing the key, the screen returns to the "normal display" (p.2-11).

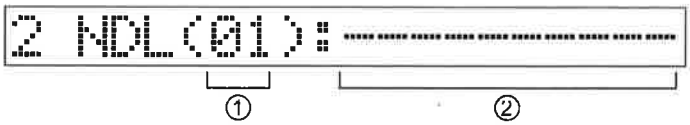
2-2. Needle Bar Selection

This setting makes the order of needle bars to be used (the needle bar to be used for each color change step).

Menu Key	Screen No.
	2

NOTE : The needle bar numbers of 10 and more are indicated as shown below.
10 → a, 11 → b, 12 → c, 13 → d, 14 → e, 15 → f

<Setting and Screen Display>



① Step number of color change

② Needle bar number

<Required Setting Item>

Setting Item	Setting Range
Needle bar number	1 to 9, a to f (10 to 15) (*1)

*** 1 : It differs depending on the model.**

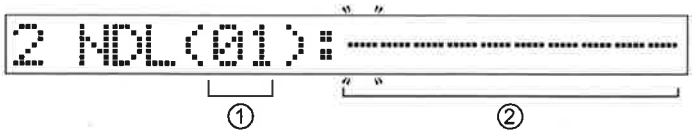
2-2-1. Procedure

[Example 1]

The order of needle bar numbers to be used is set to 3, 6, and 12

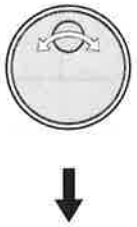
1. Select the Needle Bar Selection function.

Press the Menu Key B to display the screen as shown below.

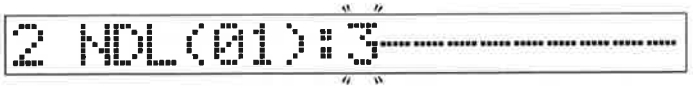


① to ②: Displays the presently set contents.

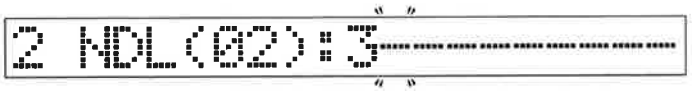
2. Set the step 1.



Select needle bar number "3" by turning the jog dial.

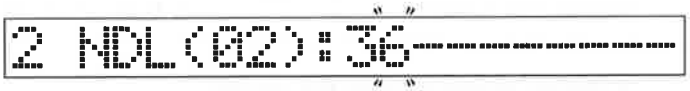


Press the [SET] key to decide the selection. The step indication moves to the right (the same as follows).



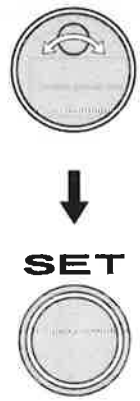
3. Set the step 2.

Select needle bar number "6" by turning the jog dial.



Press the [SET] key to decide the selection.

4. Set the step 3.



Select needle bar number "c" by turning the jog dial.

Press the [SET] key to decide the selection.

Press the [SET] key to decide the needle bar selection.

This completes the setting.

NOTE: When performing other setting(s)/operation(s), press the corresponding menu key(s)/function key(s).

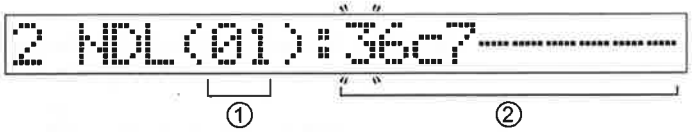
When pressing the E key, the screen returns to the "normal display" (p.2-11).

[Example 2]

When changing from the present set order "3, 6, 12, 7" to "2, 1"

1. Select the Needle Bar Selection function.

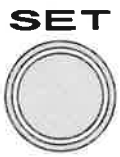
Press the Menu key B to display the screen as shown below.



① to ②: Displays the presently set contents.

2. Set the step 1.

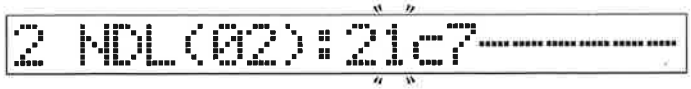
Select needle bar number "2" by turning the jog dial.

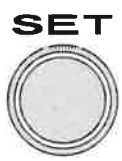


Press the [SET] key to decide the selection. The step indication moves to the right (the same as follows).

3. Set the step 2.

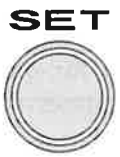
Select needle bar number "1" by turning the jog dial.





Press the [SET] key to decide the selection.

Select "–" by turning the jog dial.



Press the [SET] key to decide the needle bar selection.

This completes the setting.

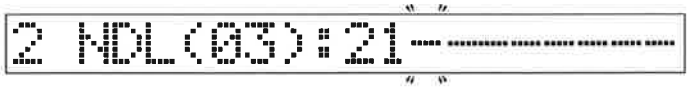
NOTE: When performing other setting(s)/operation(s), press the corresponding menu key(s)/function key(s).

When pressing the key, the screen returns to the "normal display" (p.2-11).

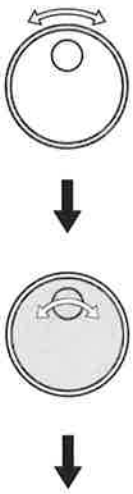
2-2-2. In case of doing the setting again

[Example 1]

When changing the needle bar number for step 2 from "1" to "6" in the screen shown below

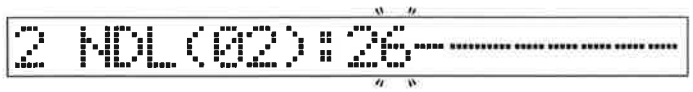


1. Set the step 1.



Set the step number to "2" by turning the jog shuttle.

Set the needle bar number to "6" by turning the jog dial.



Press the [SET] key to decide the selection.

NOTE 1: It is possible to continue the setting for needle bar selection. To complete the setting, press the [SET] key to decide the setting.

NOTE 2: When performing other setting(s)/operation(s), press the corresponding menu key(s)/function key(s).

When pressing the key, the screen returns to the "normal display" (p.2-11).

2-3. Repeat

This setting makes the machine embroider the design data input from memory repeatedly.

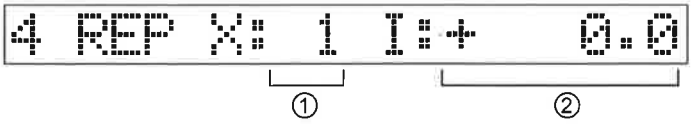
Menu Key	Screen No.
	4

NOTE 1: Except for the number of repeats, settings for design interval, repeat priority direction and design interval function cannot be done during embroidery.

NOTE 2: For the outline of repeat, refer to p.8-3.

<Setting and Screen Display>

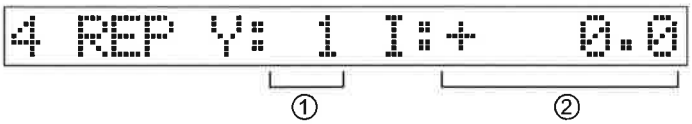
• When number of repeats and design interval in X-direction are set



① Number of repeats

② Design interval (mm)

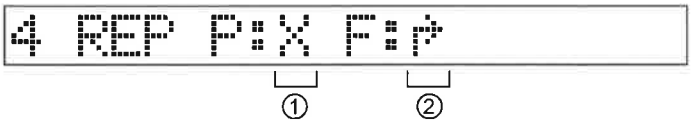
• When number of repeats and design interval in Y-direction are set



① Number of repeats

② Design interval (mm)

• When repeat priority direction and design interval function are set



① X/Y Repeat priority direction

② Design interval function

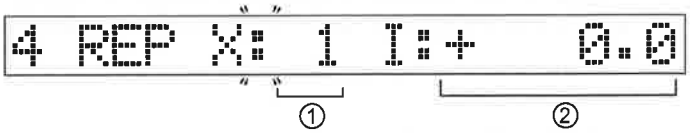
<Required Setting Items>

Setting Item	Setting Range
Number of repeats in X-direction	1 to 99
Number of repeats in Y-direction	1 to 99
Design interval in X-direction	0.1 mm and more (*1) (+: rightward/-: leftward)
Design interval in Y-direction	0.1 mm and more (*1) (+: backward/-: forward)
X/Y Repeat priority direction	X (priority in X-direction) Y (priority in Y-direction)
Design interval function	(stitch) (frame stepping)

2-3-1. Procedure

1. Select the Repeat function.

Press the Menu Key B to display the screen as shown below.



① to ②: Displays the presently set contents.

2. Set the number of repeats in X-direction.

Select number of repeats in X-direction. [ex.: 10]

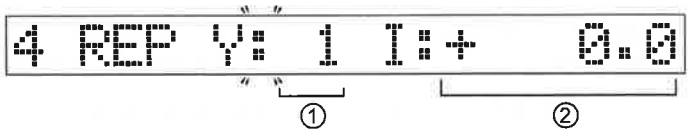
Press the [SET] key to decide the selection.

3. Set the design interval in X-direction.

Move the embroidery frame using the manual frame travel keys to set design interval in X-direction. [ex.: 150.0 (mm)]

NOTE: Setting by the jog dial is also possible.

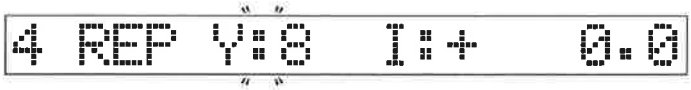
Press the [SET] key to decide the setting.



① to ②: Displays the presently set contents.

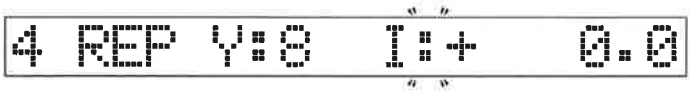
4. Set the number of repeats in Y-direction.

Select number of repeats in Y-direction by turning the jog dial. [ex.: 8]



SET

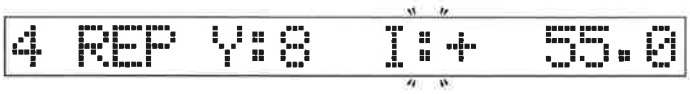
Press the [SET] key to decide the selection.



5. Set the design interval in Y-direction.

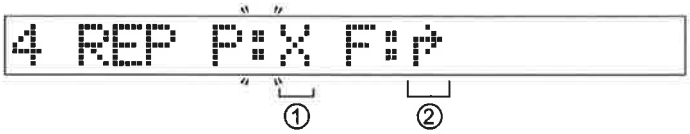
Move the embroidery frame using the manual frame travel keys to set design interval in Y-direction. [ex.: 55.0 (mm)]

NOTE: Setting by the jog dial is also possible.



SET

Press the [SET] key to decide the setting.



① to ②: Displays the presently set contents.

6. Set the X/Yrepeat priority direction.

Select repeat priority direction by turning the jog dial. [ex.: Y (Y-priority)]

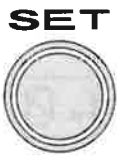
SET

Press the [SET] key to decide the selection.

7. Set the design interval function.

Select design interval function by turning the jog dial.

[ex.: (stitch)]



Press the [SET] key to decide the repeat setting.

This completes the setting.

NOTE: When performing other setting(s)/operation(s), press the corresponding menu key(s)/function key(s).

When pressing the key, the screen returns to the "normal display" (p.2-11).

2-4. Automatic Offset

Menu Key	Screen No.
	5

This function is used to set the embroidery frame to move automatically toward the front side of the machine after the completion of embroidery.

NOTE 1: Automatic offset cannot be set during embroidery.

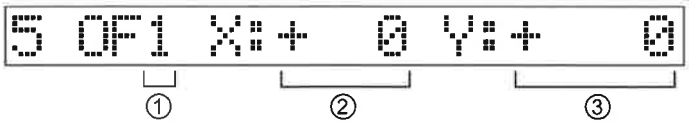
NOTE 2: To invalidate automatic offset setting, change the design (data input) or set both values of the offset middle position and the offset start position to "0".

⚠ CAUTION

When performing this operation, do not put your hands on the machine table. If your hands are on the machine table, you may be injured due to the moving frame.

<Setting and Screen Display>

• When setting an offset middle position

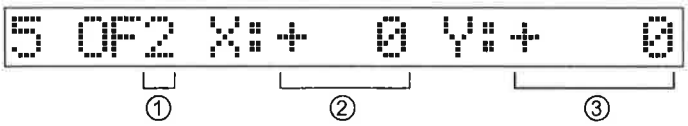


① Displays offset middle position setting mode

② Displays X data of the offset middle position

③ Displays Y data of the offset middle position

• When setting an offset start position



① Displays offset start position setting mode

② Displays X data of the offset start position

③ Displays Y data of the offset start position

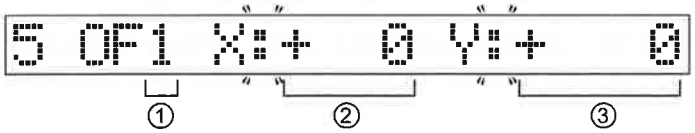
<Required Setting Item>

Setting Item	Setting Range
Offset middle position	Each position differs depending on the embroidery space of the machine and the design to be used.
Offset start position	

2-4-1. Procedure

1. Select the Automatic Offset function.

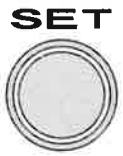
Press the Menu Key B to display the screen as shown below.



① to ③: Displays the presently set contents.

2. Set the offset middle position.

Move the embroidery frame by the manual frame travel keys to set the offset middle position. [ex.: X=+370, Y=+291]



Press the [SET] key to decide the setting.

3. Set the offset start position.

Move the embroidery frame by the manual frame travel keys to set the offset start position. [ex.: X=+540, Y=+169]

Press the [SET] key to decide the selection.

On completion of the setting, the screen becomes "normal display" (p.2-11).

NOTE: Actual display of the screen differs depending on the contents of settings.

2-5. Auto Free-setting Offset

This is the setting to move the embroidery frame toward the front side of the machine automatically at color change point(s) (as desired) and the end point of a design.

Set the auto free-setting offset with the following procedures.

1. Data input
2. Setting for needle bar selection
3. Setting for automatic offset

2-5-1. Procedure

[Example]

An applique design registered as number "3" is to be embroidered in the following manner:
(a) Performs contour stitching with the needle bar "3", and
(b) The embroidery frame is automatically moved toward the front side of the machine for applique fabric placement, and
(c) Performs hold-stitching on the applique fabric with the same needle bar "3", and
(d) Performs pattern embroidery with the needle bar "5".

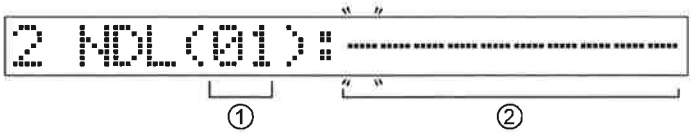
■ **Setting for Data Input**

Input data of design number "3".

■ **Setting for Needle Bar Selection**

1. Select the Needle Bar Selection function.

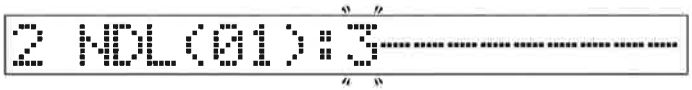
Press the Menu Key B to display the screen as shown below.



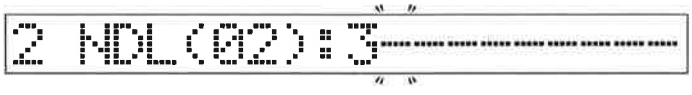
① to ②: Displays the presently set contents.

2. Set the step 1 (contour stitching).

Select needle bar number "3" by turning the jog dial.

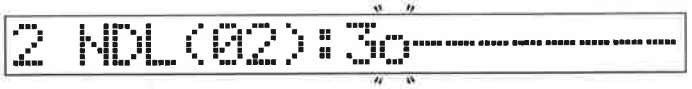


Press the [SET] key to decide the selection. The step indication moves to the right (the same as follows).



3. Set the step 2 (automatic offset movement).

Select "O" (performs automatic offset movement) by turning the jog dial.



SET

Press the [SET] key to decide the selection.

4. Set the step 3 (hold-stitching).

Select needle bar number "3" by turning the jog dial.

SET

Set the [SET] key to decide the selection.

5. Set the step 4 (pattern-stitching).

Select needle bar number "5" by turning the jog dial.

SET

Press the [SET] key to decide the selection.

Press the [SET] key to decide the needle bar selection.

■ **Setting for Automatic Offset**

After completing the contour stitching, execute setting for the embroidery frame to move toward the front side of the machine (p.6-18).

After completing the above settings, start the machine. Contour stitching will start with needle bar "3". When the contour stitching is finished, the ATH trim the thread (*1) and the embroidery frame will move toward the front side of the machine.
After setting the applique fabric, start the machine. The embroidery frame will return to the original position, and hold-stitching will start with needle bar "3". After that pattern sewing will be performed with needle bar "5".

*** 1 : When setting "the ATH is used" (p.6-3)**

2-6. Automatic Origin Return

Menu Key	Screen No.
	4

The function sets whether or not the frame is returned to the origin when the embroidery is finished.

<Setting and Screen Display>

① Displays whether or not automatic origin return is set

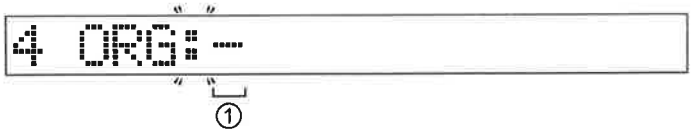
<Required Setting Item>

Setting Item	Setting Range
Setting for Automatic Origin Return	O (Performs automatic origin return) – (Does not perform automatic origin return)

2-6-1. Procedure

1. Select the Automatic Origin Return function.

Press the Menu Key C to display the screen as shown below.



① Displays the presently set content.

2. Set the automatic origin return.

Select origin return (performed/not performed) by turning the jog dial. [ex.: O (performs automatic origin return)]

SET

Press the [SET] key to decide the selection.

This completes the setting.

NOTE: When performing other setting(s)/operation(s), press the corresponding menu key(s)/function key(s).

When pressing the key, the screen returns to the "normal display" (p.2-11).

2-7. All-head Sewing Start after Frame Back

Menu Key	Screen No.
F1	4

The function is used to set the position where all heads start sewing (*1) after frame back, and whether or not the machine stops at the start sewing position.

* 1 : When the frame back operation is executed due to the detection of thread breakage, the head with which the thread breakage was detected performs sewing in the entire range of frame back regardless of the setting for all head sewing start point.

NOTE : It is impossible to set whether or not the machine stops at the all head sewing start position during embroidery.

<Setting and Screen Display>

① All-head sewing start position

② Machine stop mode at the all-head sewing start position

<Required Setting Item>

Setting Item	Setting Range
All-head sewing start position	A (entire range of frame back) 0 to 9 (0 to 9 stitches before the start position)
Machine stop mode at the all-head start position (*2)	O (Stops) – (Does not stop)

*** 2 :** When selecting "A (entire range of frame back)" at all-head sewing start position setting, only "– (Does not stop)" can be set.

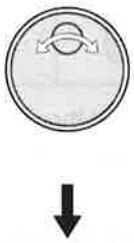
2-7-1. Procedure

1. Select the All-head Sewing Start after Frame Back function.

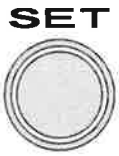
Press the F1 key to display the screen as shown below.

① to ②: Displays the presently set contents.

2. Set the all-head sewing start position.



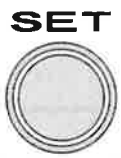
Select all-head sewing start position by turning the jog dial.
[Ex.: 5 (5 stitches before the thread break detected position)]



Press the [SET] key to decide the selection.

3. Set the machine stop mode at the all-head sewing start position

Select the machine stop mode at the all-head sewing start position.
[ex.: O (Stops)]



Press the [SET] key to decide the selection.

This completes the setting.

NOTE 1: When "O (Stops)" is set for machine stop mode at the all-head sewing start position, the machine stops at all-head sewing start position and displays code number [1D1]. Therefore, start the machine by the bar switch or by the start switch.

NOTE 2: When performing other setting(s)/operation(s), press the corresponding menu key(s)/function key(s).

When pressing the E key, the screen returns to the "normal display" (p.2-11).

3. DATA PROCESSING

3-1. Data Conversion

Menu Key	Screen No.
	3

The function is used to set details for converting the input design data temporarily such as scaling, rotation of the design for embroidery.

NOTE 1: Data conversion is not allowed during embroidery.

NOTE 2: For the outline of data conversion, refer to p.8-1.

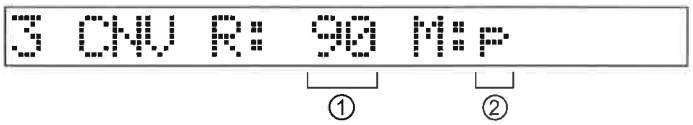
<Setting and Screen Display>

• When X/Y Scaling is set

① X scale value

② Y scale value

• When Rotation/Mirroring is set



① Rotation angle

② Reversion

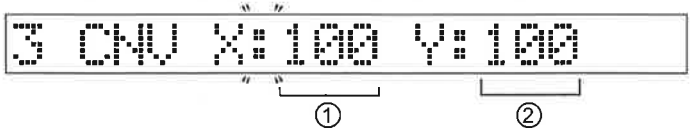
<Required Setting Item>

Setting Item	Setting Range	Setting Unit
X/Y Scaling	50 to 200%	1%
Rotation angle	0 to 359°	1°
Reversion	P (No reversion) (Reversed)	

3-1-1. Procedure

1. Select the Data Conversion function.

Press the Menu Key B to display the screen as shown below.



① to ②: Displays the presently set contents.

2. Set the X scale.

Select scale value of X-direction by turning the jog dial.
[Ex.: 150 (%)]

SET

Press the [SET] key to decide the selection.

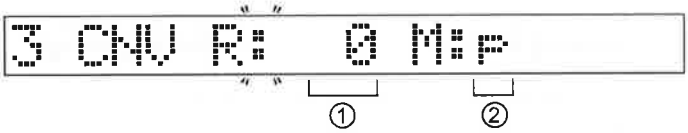
① The same setting value as X scale is automatically displayed.

3. Set the Y scale.

Select scale value of Y-direction by turning the jog dial.
[Ex.: 180 (%)]

SET

Press the [SET] key to decide the selection.



① to ②: Displays the presently set contents.

4. Set the rotation angle.

Select rotation angle by turning the jog dial. [Ex.: 90 (°)]

SET

Press the [SET] key to decide the selection.

5. Set the mirroring.

Select Reversion ON/OFF by turning the jog dial.

[ex.: ㄱ (Reversed)]

SET

Press the [SET] key to decide the selection.

This completes the setting.

NOTE: When performing other setting(s)/operation(s), press the corresponding menu key(s)/function key(s).

When pressing the E key, the screen returns to the "normal display" (p.2-11).

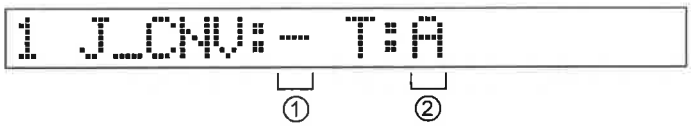
3-2. Jump Conversion

Menu Key	Screen No.
F1	1

The function is used to set the number of stitches of jump code data with which those data are converted into a frame stepping code. The function also sets the frame movement mode (batch processing/according to data) in frame stepping operation.

NOTE : For the outline of jump conversion, refer to p.8-9.

<Setting and Screen Display>



① Number of stitches to be converted

② Frame movement mode

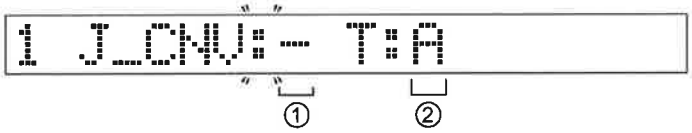
<Required Setting Item>

Setting Item	Setting Range
Number of stitches to be converted	1 to 9 (stitches) – (No jump conversion)
Frame movement mode	A (Travels continuously in batch processing) B (Travels stitch by stitch according to data)

3-2-1. Procedure

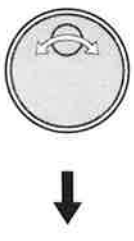
1. Select the Jump Conversion function.

Press the F1 key to display the screen as shown below.

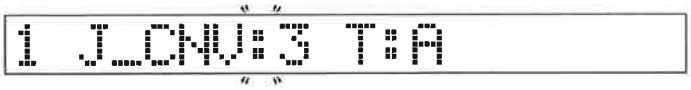


① to ②: Displays the presently set contents.

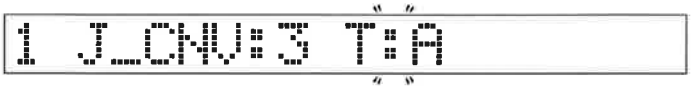
2. Set the number of stitches.



Select number of stitches by turning the jog dial. [ex.: 3]

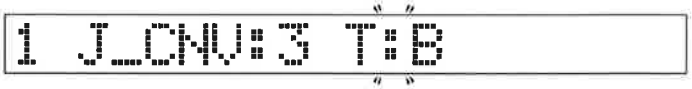


Press the [SET] key to decide the selection.

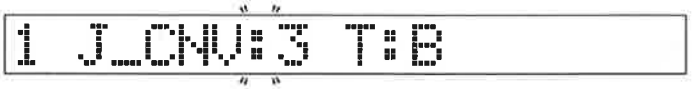


3. Set the frame movement mode.

Select frame movement mode by turning the jog dial.
[ex.: B (according to data)]



Press the [SET] key to decide the selection.



This completes the setting.

NOTE: When performing other setting(s)/operation(s), press the corresponding menu key(s)/function key(s).

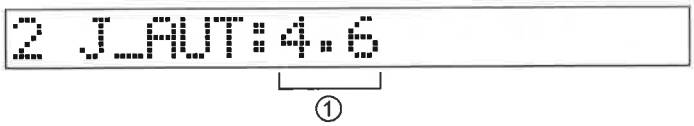
When pressing the key, the screen returns to the "normal display" (p.2-11).

3-3. Automatic Jump

Menu Key	Screen No.
F1	2

The function is used to set the stitch length that causes automatic jump if the stitch length to be sewn is longer than a specified length.

<Setting and Screen Display>



① Stitch length

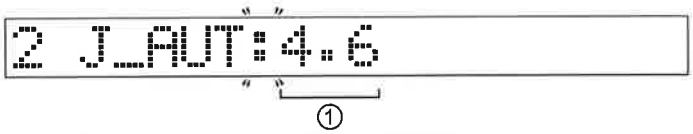
<Required Setting Item>

Setting Item	Setting Range	Setting Unit
Stitch length	4.0 to 9.9 (stitch length that causes automatic jump) - (Does not perform automatic jump)	0.1 mm

3-3-1. Procedure

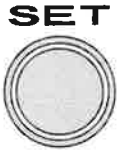
1. Select the Automatic Jump function.

Press the F1 key to display the screen as shown below.



① Displays the presently set contents.

2. Set the stitch length.



Select stitch length by turning the jog dial. [ex.: 8.0 (mm)]

Press the [SET] key to decide the selection.

This completes the setting.

NOTE: When performing other setting(s)/operation(s), press the corresponding menu key(s)/function key(s).

When pressing the E key, the screen returns to the "normal display" (p.2-11).

3-4. Satin Stitch

Menu Key	Screen No.
	3

The function is used to set expansion of the distance of satin stitches.

NOTE : For the outline of Satin Stitch, refer to p.8-7.

<Setting and Screen Display>

① Displays the satin stitch distance expansion amount.

<Required Setting Item>

Setting Item	Setting Range	Setting Unit
Satin stitch distance expansion amount	0.1 to 1.0 (expansion amount) – (Does not expand)	0.1 mm

3-4-1. Procedure

1. Select the Satin Stitch function.

Press the F1 key to display the screen as shown below.

① Displays the presently set content.

2. Set the expansion amount.

Select expansion amount by turning the jog dial. [ex.: 0.3 (mm)]

Press the [SET] key to decide the selection.

This completes the setting.

NOTE: When performing other setting(s)/operation(s), press the corresponding menu key(s)/function key(s).

When pressing the key, the screen returns to the "normal display" (p.2-11).

CHAPTER 7 SETTING ON OPTIONS

1. OPTIONS

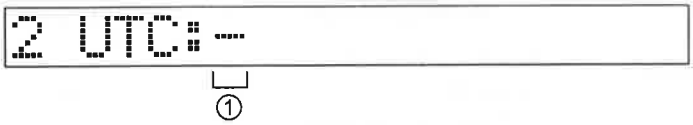
1-1. Under Thread Breakage Detection

This sets the detection method of under thread breakage (how many times of detections of under thread breakage signal are regarded as under thread breakage).

Menu Key	Screen No.
F3	2

NOTE : The thread breakage indicator lamp (red) blinks (p.1-11) if under thread breakage is detected and, at the same time, error code number [293] (p.9-1) is displayed and the machine stops.

<Setting and Screen Display>



① Under thread breakage detection method

<Required Setting Item>

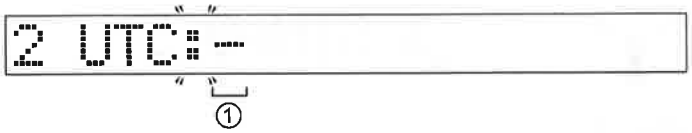
Setting Item	Setting Range
Under thread breakage detection method	4 to 10: Detects (*1) –: Does not detect

*** 1 : Setting of 4 to 10**
The function recognizes the breakage of thread if under thread breakage signal is input consecutively by the set number of times.

1-1-1. Procedure

1. Select the Under Thread Breakage Detection function.

Press the F3 key to display the screen as shown below.

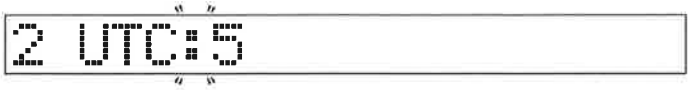


① Displays the present setting for the under thread breakage detection method.

2. Set the under thread breakage detection method.

Select detection method by turning the jog dial.
[ex.: 5 (5-consecutive detection)]

Press the [SET] key to decide the selection.



This completes the setting.

NOTE: When performing other setting(s)/operation(s), press the corresponding menu key(s)/function key(s).

When pressing the key, the screen returns to the "normal display" (p.2-11).

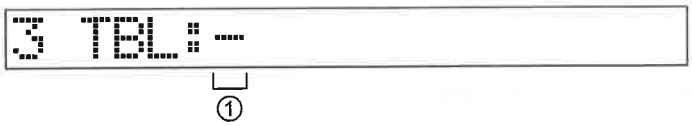
1-2. Sub-table Lifter (TMFXV-C)

Menu Key	Screen No.
	

This is the setting for making sub-table lifter available.

NOTE : Setting for sub-table lifter is not allowed during embroidery.

<Setting and Screen Display>



① Displays whether or not the auto sub-table lifter is used

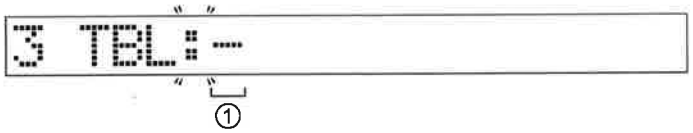
<Required Setting Item>

Setting Item	Setting Range
Setting for auto sub-table lifter	O (Auto sub-table lifter is used) – (Auto sub-table lifter is not used)

1-2-1. Procedure

1. Select the Auto Sub-table Lifter function.

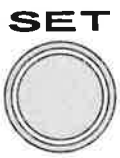
Press the F3 key to display the screen as shown below.



① Displays the present setting for the auto sub-table lifter.

2. Set the auto sub-table lifter.

Select the setting for the auto sub-table lifter by turning the jog dial.
[ex.: O (Auto sub-table lifter is used)]



Press the [SET] key to decide the selection.

This completes the setting.

NOTE: When performing other setting(s)/operation(s), press the corresponding menu key(s)/function key(s).

When pressing the key, the screen returns to the "normal display" (p.2-11).

1-3. Boring Device

This is the setting for making the boring device available and data processing method when boring is performed.

Menu Key	Screen No.
F3	4

NOTE : Setting for boring device is not allowed during embroidery.

<Setting and Screen Display>

① Displays the setting for boring device

<Required Setting Item>

Setting Item	Setting Range
Setting for boring device	1 (Performs boring) without data processing (*1) 2 (Performs boring) Offset mount of data is erased and mechanical offset is added 12 mm. (*2) 3 (Performs boring) Mechanical offset is added 12 mm. (*3) - (Not performing boring)

* 1 : The frame moves as the data is. If converting data, correct boring cannot be made.

* 2 : Data conversion is possible.

* 3 : Data conversion is possible.

NOTE : When design data contains boring offset data, select "1" or "2". When design data does not contain boring offset data, select "3".

1-3-1. Procedure

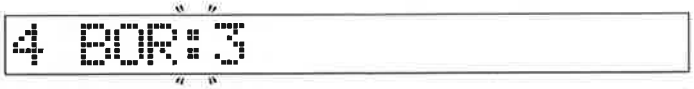
1. Select the Boring function.

Press the F3 key to display the screen as shown below.

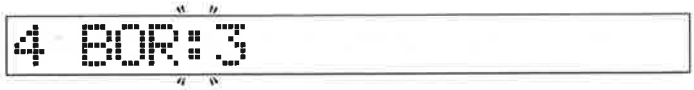
① Displays the presently set contents.

2. Set the boring device.

Select setting for boring by turning the jog dial.
[ex.: 3 (Performs boring)]



Press the [SET] key to decide the selection.



This completes the setting.

NOTE: When performing other setting(s)/operation(s), press the corresponding menu key(s)/function key(s).

When pressing the key, the screen returns to the "normal display" (p.2-11).

1-4. Cording Device

Menu Key	Screen No.
F3	6

This is the setting for making the cording device available.

NOTE : Setting for cording device is not allowed during embroidery.

<Setting and Screen Display>

① Displays the setting for cording device

<Required Setting Item>

Setting Item	Setting Range
Setting for cording device	O (Cording device is used) – (Cording device is not used)

1-4-1. Procedure

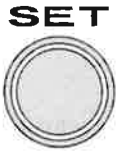
1. Select the Cording function.

Press the F3 key to display the screen as shown below.

① Displays the presently set contents

2. Set the cording device.

Select the setting for cording device by turning the jog dial.
[ex.: O (Cording device is used)]



Press the [SET] key to decide the selection.

This completes the setting.

NOTE: When performing other setting(s)/operation(s), press the corresponding menu key(s)/function key(s).

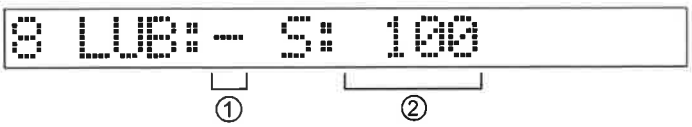
When pressing the E key, the screen returns to the "normal display" (p.2-11).

1-5. Automatic Lubrication System

Menu Key	Screen No.
F3	8

This is the setting for making automatic lubrication system available and stitches for lubrication.

<Setting and Screen Display>



① Setting for automatic lubrication system

② Setting for stitches for lubrication

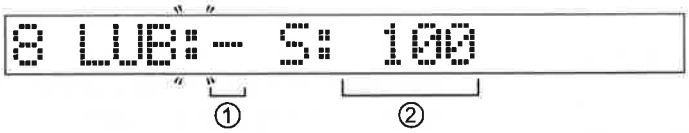
<Required Setting Items>

Setting Item	Setting Range	Setting Unit
Setting for automatic lubrication system	O (Automatic lubrication system is used) – (Automatic lubrication system is not used)	
Setting for stitches for lubrication	1 to 9999	1,000 stitches

1-5-1. Procedure

1. Select the Automatic Lubrication function.

Press the F3 key to display the screen as shown below.

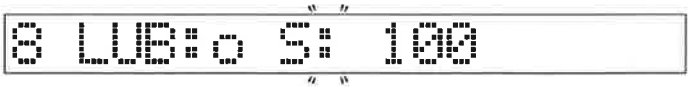


① to ②: Displays the presently set contents.

2. Set the automatic lubrication system.

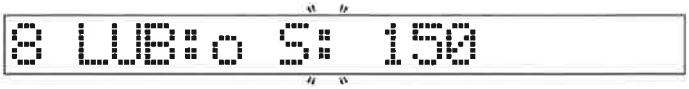
Select the setting for automatic lubrication system by turning the jog dial. [ex.: O (Automatic lubrication system is used)]

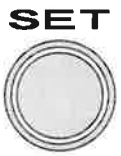
Press the [SET] key to decide the selection.



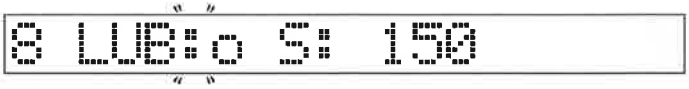
3. Set the stitches for lubrication.

Select stitches for lubrication by turning the jog dial.
[Ex.: 150 (150,000 stitches)]





Press the [SET] key to decide the selection.



This completes the setting.

NOTE: When performing other setting(s)/operation(s), press the corresponding menu key(s)/function key(s).

When pressing the key, the screen returns to the "normal display" (p.2-11).

1-6. Bobbin Changer

Menu Key	Screen No.
F3	9

This is the setting for making bobbin changer available.

<Setting and Screen Display>

① Setting for bobbin changer

<Required Setting Item>

Setting Item	Setting Range
Setting for bobbin changer	O (Bobbin changer is used) – (Bobbin changer is not used)

1-6-1. Procedure

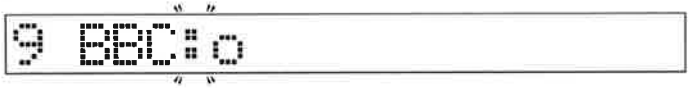
1. Select the Bobbin Changer function.

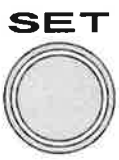
Press the F3 key to display the screen as shown below.

① Displays the presently set contents.

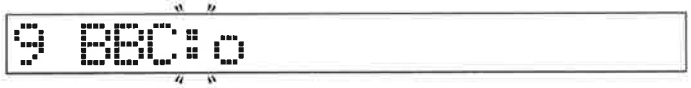
2. Set the bobbin changer.

Select the setting for bobbin changer by turning the jog dial.
[ex.: O (Bobbin changer is used)]





Press the [SET] key to decide the selection.



This completes the setting.

NOTE: When performing other setting(s)/operation(s), press the corresponding menu key(s)/function key(s).

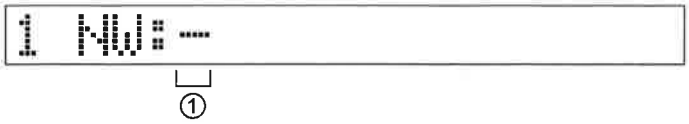
When pressing the key, the screen returns to the "normal display" (p.2-11).

1-7. Network (DG/ML)

This is the setting for making two-way network possible using the DG/ML.

Menu Key	Screen No.
F4	1

<Setting and Screen Display>



① Setting for network

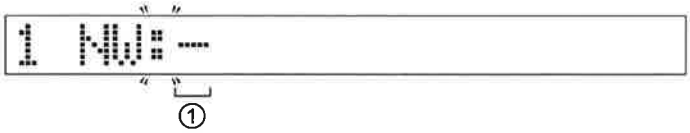
<Required Setting Item>

Setting Item	Setting Range
Setting for network	O (To set the network) – (Not to set the network)

1-7-1. Procedure

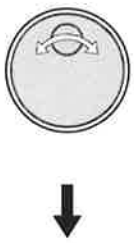
1. Select the Network function.

Press the F4 key to display the screen as shown below.



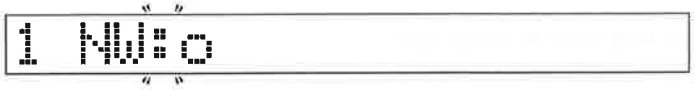
① Displays the presently set contents.

2. Set the network.



Select the setting for network by turning the jog dial.
[Ex.: O (To set the network)]

Press the [SET] key to decide the selection.



This completes the setting.

NOTE: When performing other setting(s)/operation(s), press the corresponding menu key(s)/function key(s).

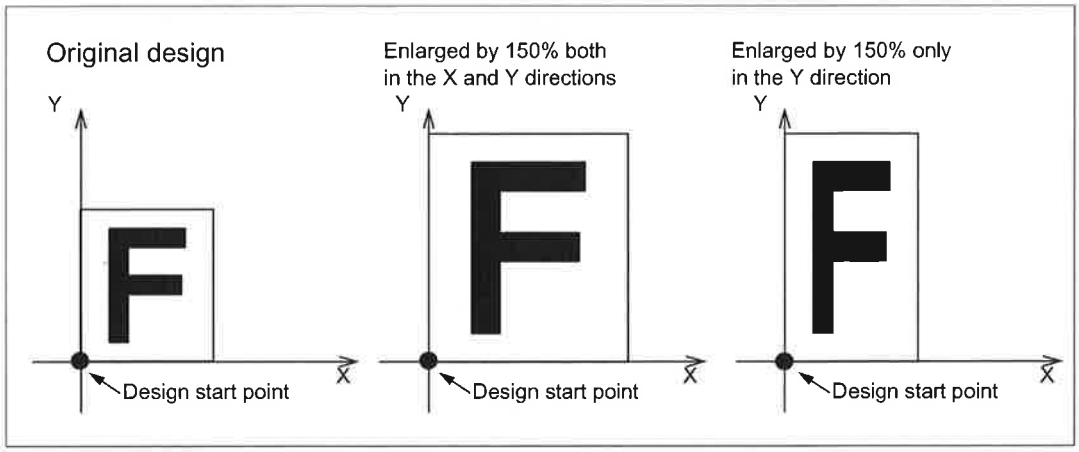
When pressing the key, the screen returns to the "normal display" (p.2-11).

CHAPTER 8 OUTLINE OF FUNCTIONS

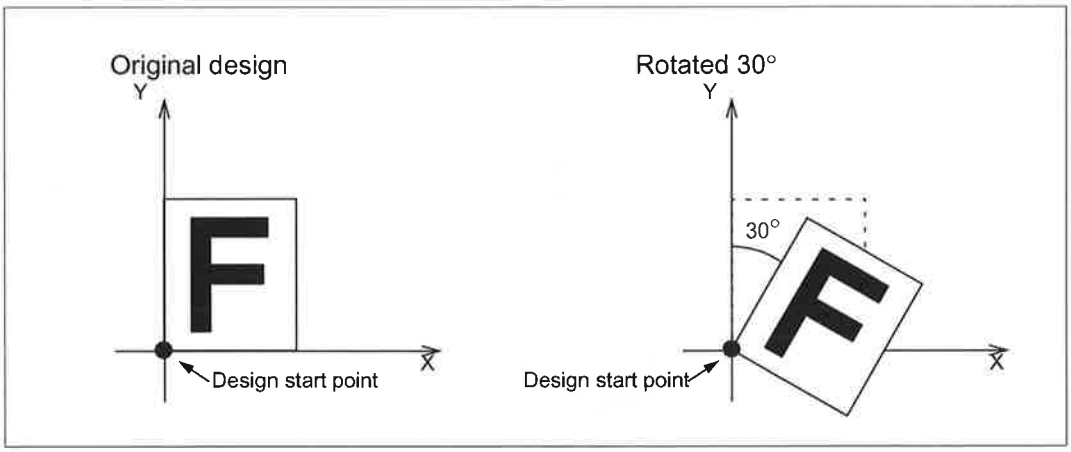
1. DATA CONVERSION

The function is used to set details for converting the input design data to make embroidery. The contents of each setting item is shown as follows. Also, each setting item can be combined.

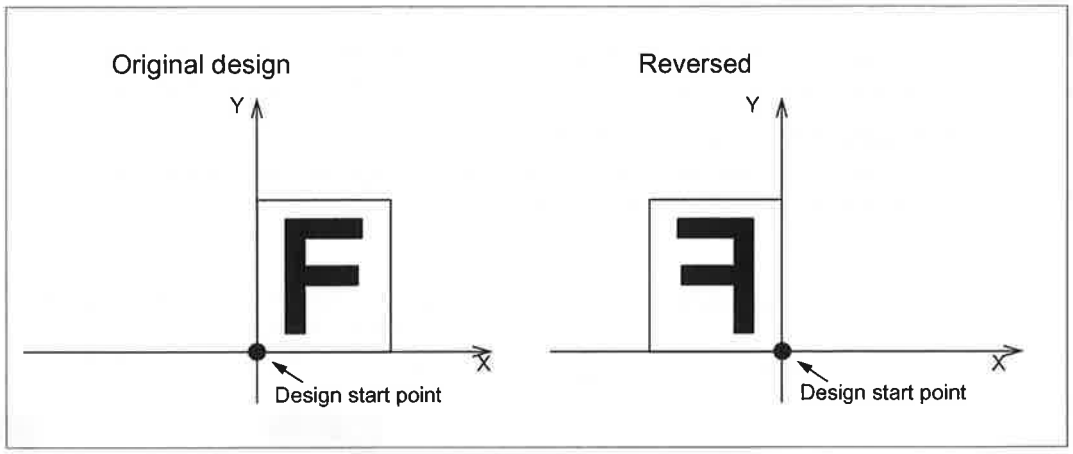
- **Scaling X/Y** (Magnification Rate)
  A design can be enlarged/reduced in the X (right and left) and Y (back and forth) directions independently in the range from 50 to 200%.



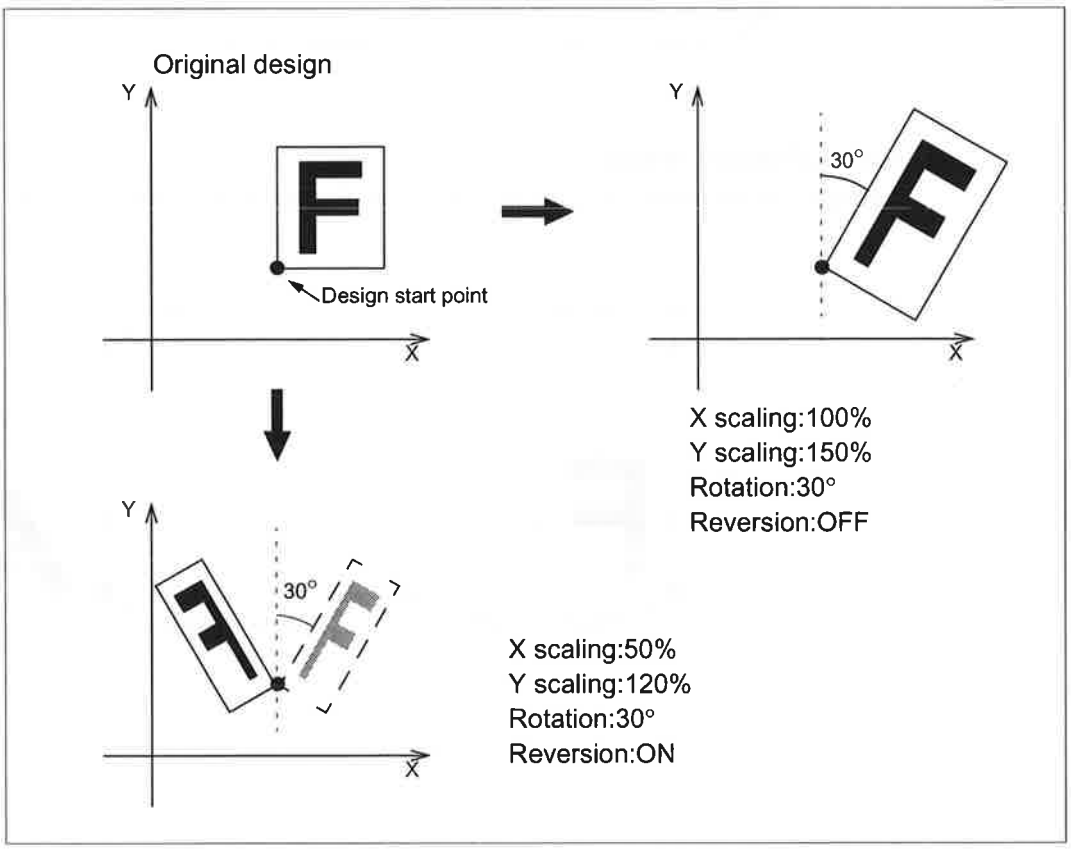
- **Rotation (Rotation Angle)**
  A design can be rotated in 1° increment in the clockwise direction up to 359°.



- **Reversion (Mirror Image)**
  A design can be reversed symmetrically using the Y-axis as the base line.



[Example of Combination of Conversion]



2. REPEAT

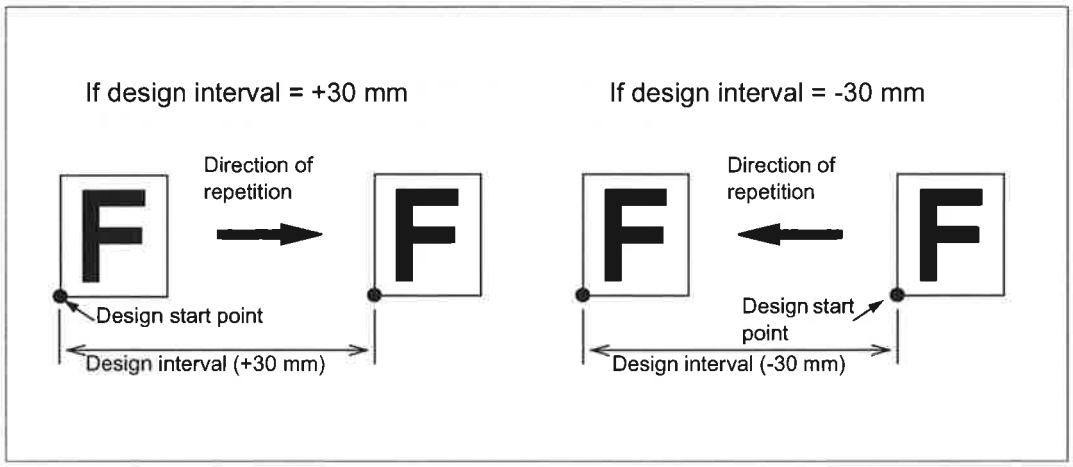
This function is used to make repeated embroidery based on input design data. The contents of each setting item is shown as follows:

- **Number of times a design is repeated**
  Set how many times a design is repeated in the X (right and left) and Y (backward and forward) directions.
  Setting for the X and Y directions may be made independently of each other.

- **Design interval**
  Set the interval between the designs to be repeated (distance between the start points of adjacent designs) in the X and Y directions.
  Setting for the X and Y directions may be made independently of each other.
  The direction of repetition can be set by the sign (+/-) as shown below.
  <X direction>

  +: The design is repeated to the right.

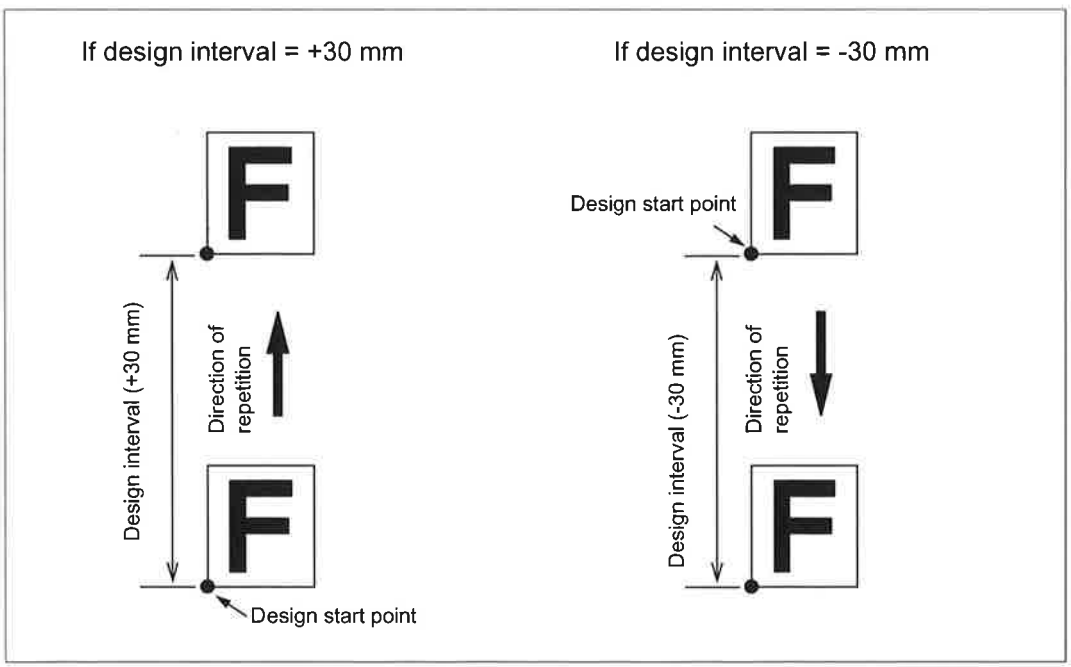
  -: The design is repeated to the left.



<Y direction>

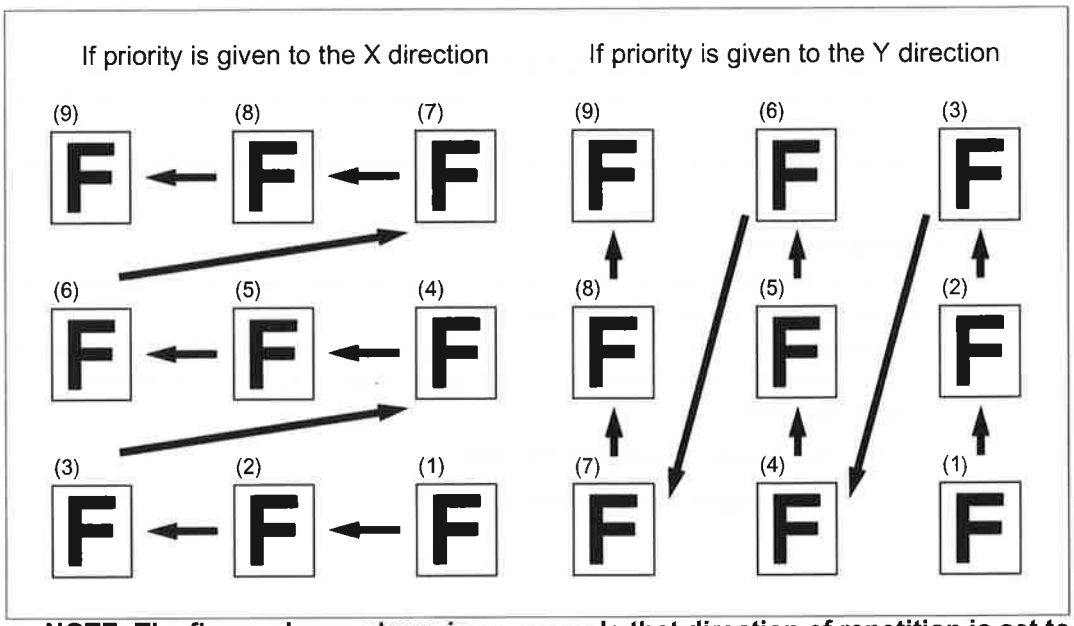
+: The design is repeated backward.

-: The design is repeated forward.



- **X/Y repeat priority**

  Set the direction the priority is given if the repetition of the same design is made.



NOTE: The figure shown above is an example that direction of repetition is set to the left (-) in the X direction and upward (+) in the Y direction.

- **Deign interval function**

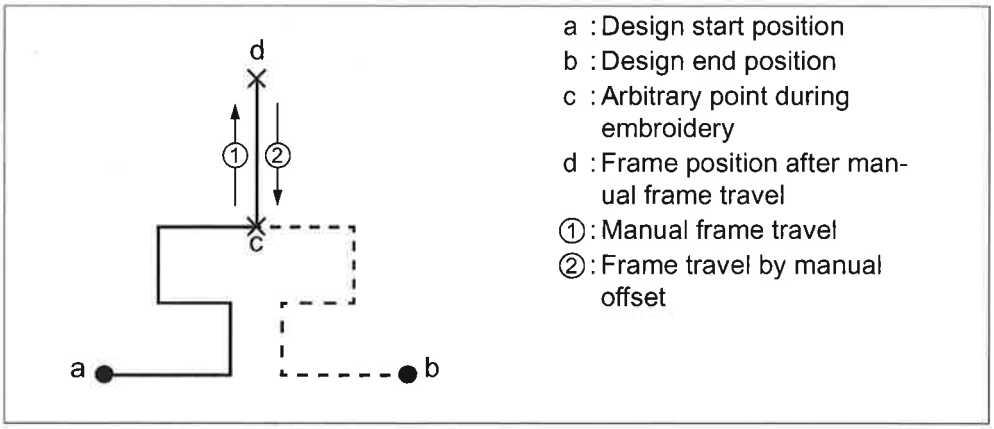
  This sets how the interval between designs is processed - stitch mode (moves by stitching the design-to-design interval) or frame stepping mode.

3. OFFSET

This function is used to move the embroidery frame toward the front side of the machine at the end point of embroidery or any designated point during embroidery.

- **Manual offset**

  Stop embroidering at an arbitrary point c, move the embroidery frame manually to a forward position d, and execute applique placing, etc. Then, execute "manual offset" operation to return the embroidery frame to the arbitrary point c. When the machine is restarted, embroidering is continued.

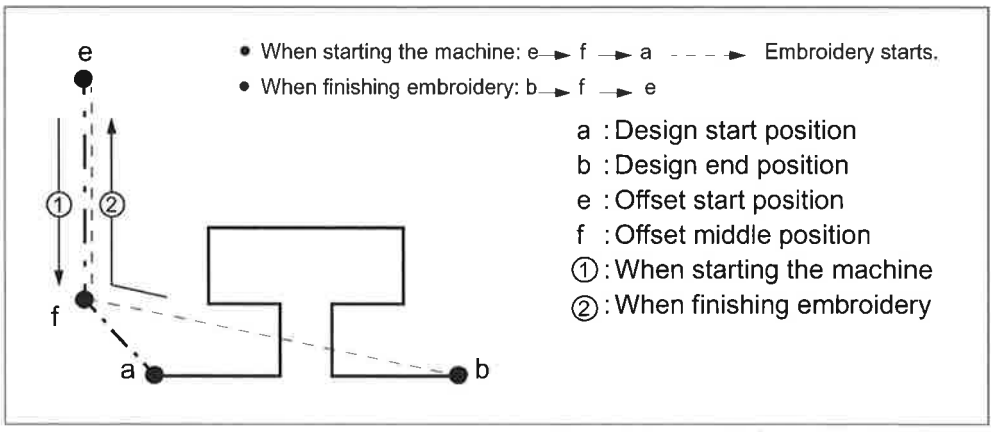


- **Automatic offset**

  Set offset middle position (f) and offset start position (e). When embroidering reaches design end position (b) and the thread is trimmed (*1), the embroidery frame automatically returns to the offset start position via the offset middle position (f). Change the frame and restart the machine. The embroidery frame moves to the design start position (a) via the offset middle position (f), and embroidering is started. After embroidery is finished, the embroidery frame will move to the offset start position.

*** 1: When "used" has been set for "Automatic Thread Trimming" (p.6-3)**

NOTE : It is also possible to omit the offset middle position. In this case, the embroidery frame moves directly to the embroidery start position (when starting embroidery)/ the offset start position (when finishing embroidery) without moving via the offset.

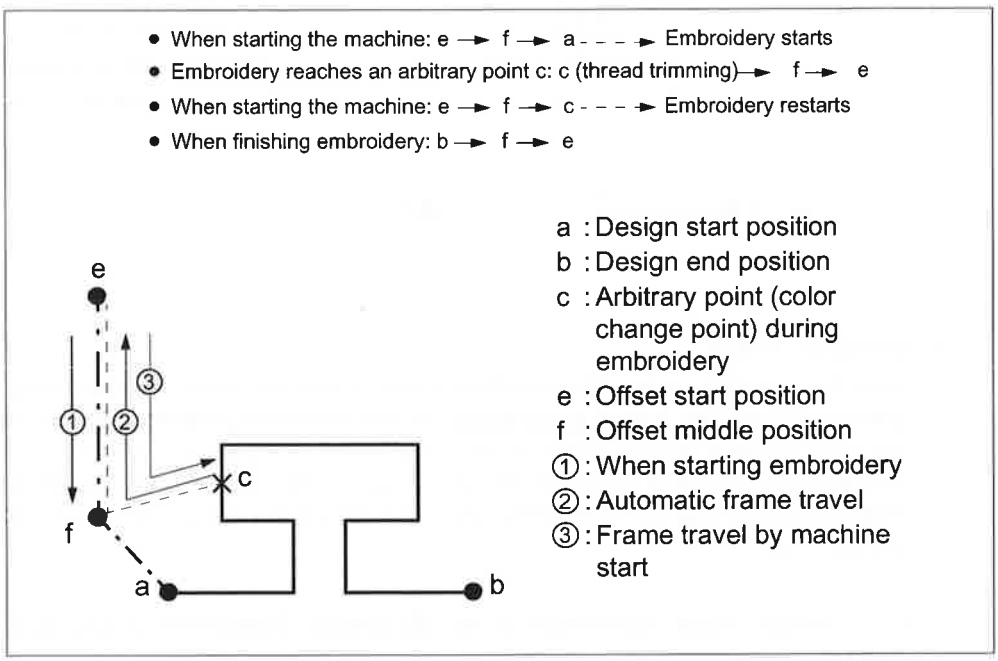


- **Automatic free setting offset**

  Set an arbitrary point (arbitrary color change point) (c) for executing automatic offset during embroidery by needle bar selection setting, and also set an offset middle position (f) and an offset start position (e). Thread trimming is performed (*1) when embroidery reaches the arbitrary point (c), and the embroidery frame automatically moves to the offset start position (e) via the offset middle position (f). After working such as applique fabric placing, etc. and restarting the machine, the embroidery frame return to the arbitrary point (c) via the offset middle position (f) to continue embroidery. When embroidering is completed, the embroidery frame return to the offset start position.

*** 1: When "used" has been set for "Automatic Thread Trimming" (p.6-3)**

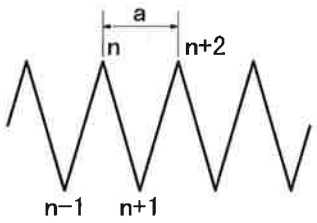
NOTE : It is also possible to omit the offset middle position. In this case, the embroidery frame moves directly to the embroidery start position (when starting embroidery)/ the offset start position (when finishing embroidery) without moving via the offset.



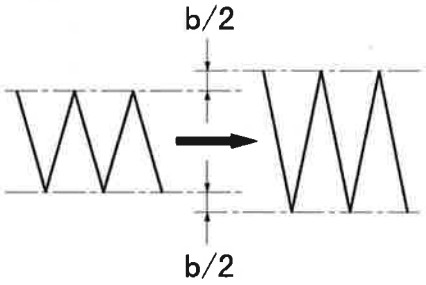
4. SATIN STITCH

This is the setting for expanding satin stitch length. Density and Additional Stitch Data that are necessary for satin stitch setting are explained here.

- Density
  When a distance (a) between nth stitch data and n+2th stitch data is 1mm or less, it is regarded as a satin stitch.



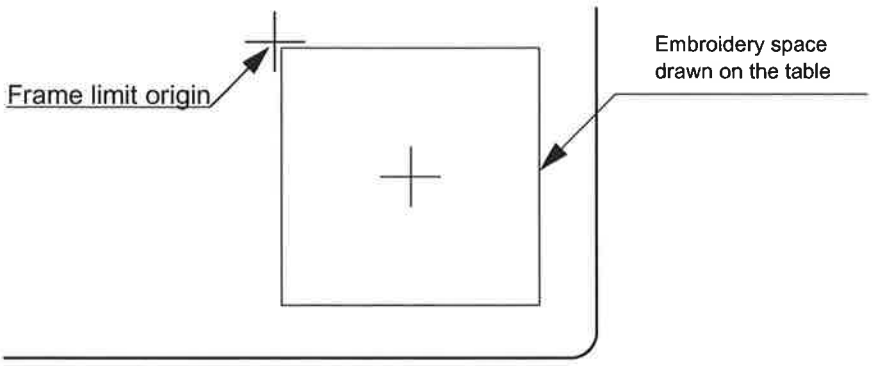
- Additional Stitch Data
  This is the setting for amount of expanding stitch that is regarded as satin stitch. 1/2 of set value (b) that is (b/2) is added to each of both sides of stitch length.



5. FRAME LIMIT ORIGIN MEMORY

This operation is required when executing software installation, and makes the machine memorize the frame limit origin (0, 0) of the embroidery space.

Positional relationship between the frame limit origin and the embroidery frame position (embroidery space indicator) is shown below.



6. TRACE

This operation moves the frame along the maximum embroidery range of the design data (*1) which has been set to check the size of the design and the start position in reference to the embroidery frame and the embroidered material.

*** 1 : Trace operation is possible only for the design data, having been input from the FDD, which satisfies the conditions indicated below.**

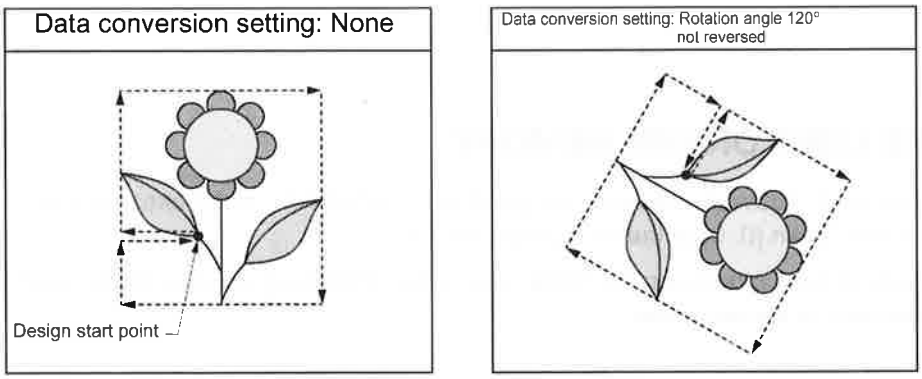
- TAJIMA format design data is used.
- The data is input from a single floppy disk.
- The embroidery range (±X, ±Y) of the design data is valid. If all of the embroidery range values are "0" or if any one of the data cannot be expressed by a digital value, the embroidery range is regarded invalid.

NOTE : Even with the design data input from the FDD, accurate tracing will be impossible if the data is edited causing the maximum embroidery range to change. To perform tracing accurately for the data having been edited causing the maximum embroidery range to change, the edited data must be saved to the floppy disk once. (It is not necessary to input data again.)

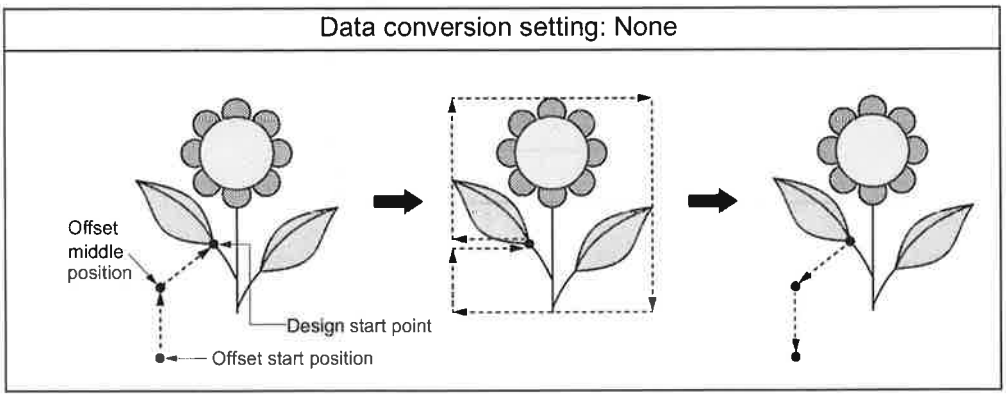
6-1. Trace Operation

The embroidery frame moves so that the needle locating position will draw the path explained below. (Even with the same design data, the trace path will differ depending on the setting of the automatic offset and data conversion.)

[When automatic offset setting is "NO"]



[When automatic offset setting is "YES"]



NOTE : If repeat operation has been set, only the initial one design can be traced.

■ **When tracing is interrupted**

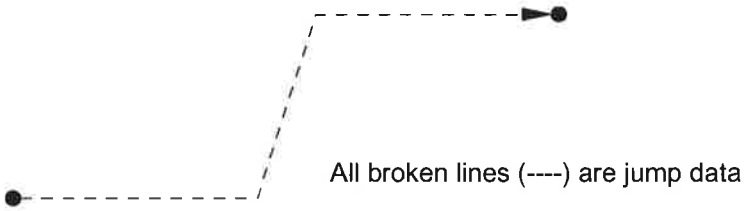
When tracing is interrupted by the factors indicated below, it is not possible to restart tracing from the interrupted point even if resetting the machine. In this case, execute "manual offset" or "manual origin return" operation so that the embroidery frame returns to the trace start point to make tracing possible again.

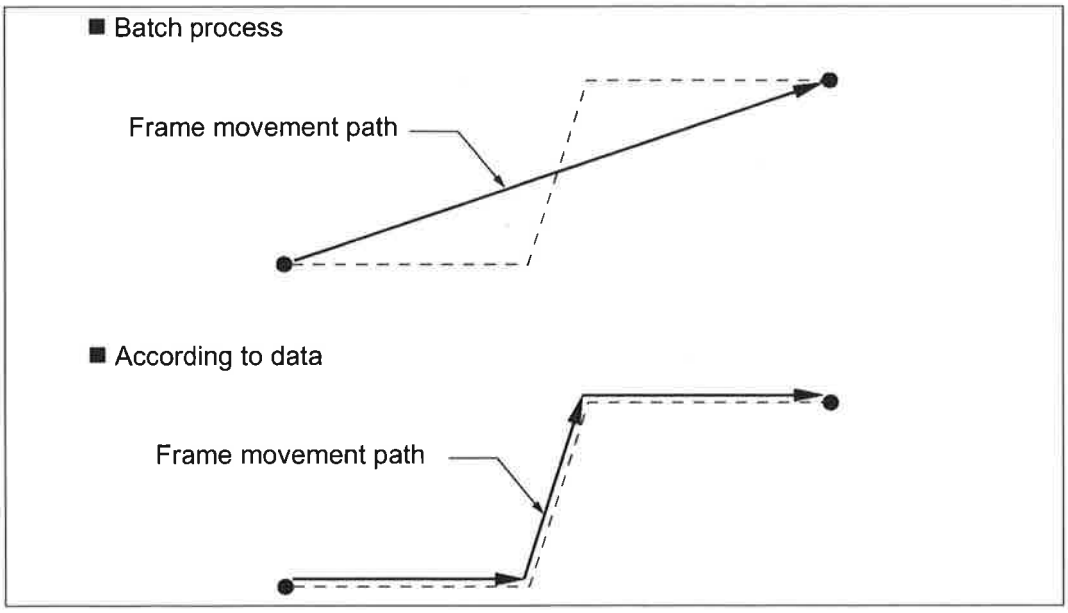
- Interrupting factors of trace
  - Stop by the bar switch or the stop switch (Code number 1C1 is displayed, and the machine stops after the frame moves to the position where advancing direction changes).
  - Fixed position signal is not detected (Code number 211 is displayed, and the frame stops immediately).
  - Frame limit is detected (Code number 221, 222, 223, or 224 is displayed, and the frame stops immediately).

NOTE : When tracing is interrupted halfway by the emergency stop switch or power failure, turn ON the power again and execute "Power Resume" operation (p.4-16) so that the embroidery frame returns to the trace start point to make tracing possible again.

7. FRAME MOVEMENT METHOD AT JUMP CONVERSION

There are two types ["batch process" and "according to data"] of frame movement methods at jump conversion. Difference in frame movement when jump conversion is executed is shown as below.





NOTE : To execute automatic frame detachment, set to "according to data" (*1).

*** 1 : After embroidering is finished, the frame automatically moves and the embroidery frame (sock frame, etc.) is detached from the base frame.**

CHAPTER 9 TROUBLESHOOTING AND MAINTENANCE

1. REQUIRED ACTIONS AT MACHINE STOP

This section deals with how to take correct countermeasures if a trouble such that the machine stops during operation and the machine fails to start occurred.

1-1. If Machine Operation is Interrupted

If the machine stops during operation with a code displayed at the screen on the operation panel, recover the machine operation by following the corrective action indicated in the tables below.

1-1-1. Stop due to Occurrence of Error

NOTE : If a code number of 300-series is displayed, contact your local distributor.

Code No.	Stop Factor	Corrective Action
211	A fixed position signal is not detected. (Main shaft Z signal)	Return the main shaft to the fixed position. Check the encoder signal.
221	The frame has traveled left exceeding the position set by the frame limit.	Move the frame manually so that the design fits in the embroidery area.
222	The frame has traveled right exceeding the position set by the frame limit.	
223	The frame has traveled forward exceeding the position set by the frame limit.	
224	The frame has traveled backward exceeding the position set by the frame limit.	
225	Stitching outside the embroidery space. (When setting Cap frame spec. or Software frame limit)	
228	Table up/down operation was attempted although the frame is in the front side position.	Move the frame back to the rearmost end before moving the table up/down.
251	Lubrication pump oil is insufficient.	Supply oil to the tank.
281	The target needle position is not detected within 15 seconds after the start of color change.	• Return the needle position to make the correct display. • Check or replace the potentiometer (needle position sensor).
291	Upper thread breakage is detected.	Check the upper threads.
	Tension base card is faulty.	Replace the tension base card. If embroidery is continued temporarily, cut off the troubled head from the control (p.9-6).
293	Under thread breakage is detected.	Check the under threads.
2B1	No response is received for 5 seconds since the operation was started using a serial I/F. (Serial I/F device is not correctly connected.)	• Check connection of the devices. • Repair or correct the design data.
2B2	TAJIMA code complement data error (Same + and - numbers exist in one stitch data.)	Correct the design data.

Code No.	Stop Factor	Corrective Action
2B3	Data exists in an end code.	Correct the design data.
2B4	Code format error (A stitch code does not exist at the third character.)	Correct the design data.
2B5	Sequin data error	Correct the design data.
2B6	The serial interface is not ready.	Set the serial interface to the Communications mode.
2B7	When the machine was started, or frame forward was performed although data was not input.	Perform data input.
2B8	When the pre-reading buffer becomes empty (output data is absent).	During operation: Lower the main shaft speed During frame forward operation: Wait until the design data is all read.
2B9	Memory write error	Check the CPU card or memory card. Replace the card if necessary.
2BA	Memory capacity over	Delete unnecessary designs registered in memory.
2BB	Frame back movement exceeded the allowable range.	Do not perform further frame back.
2BC	No design is registered in the memory.	Register designs in the memory.
	An attempt was made to erase from memory the design currently being embroidered.	To erase from memory a design currently being embroidered, either set other design or the same design again by data setting.
	An attempt was made to edit data (cleanup) (p.3-32) during embroidery.	Do not edit data (cleanup) during embroidery.
2C2	Incorrect option setting	Set correctly.
2C6	Machine operation was attempted although the bobbin changer was running.	Do not operate the machine during running of the bobbin changer.
2E3	Power supply has been interrupted during embroidery.	After turning ON the power again, perform "Power Resume" operation.
311	Encoder A signal status does not change for 5 seconds.	• Check encoder or encoder signal lines. • Check the main shaft driver for excitation.
	Motor or motor belt failure.	Check the motor or motor belt.
312	Encoder Z signal status does not change.	Check the encoder or encoder signal lines.
316	A main shaft driver error signal is detected.	Replace the main shaft driver unit or main shaft motor.
322	An X-axis pulse motor driver error signal is detected.	Replace the X-axis driver unit.
323	An Y-axis pulse motor driver error signal is detected.	Replace the Y-axis driver unit.
331	Bobbin changer error	Check the bobbin changer.

Code No.	Stop Factor	Corrective Action
382	The needle position signal status during color change does not change for 1 second or more.	• Check the color change motor and power supply circuit. • Check the potentiometer (needle position sensor).
383	No needle position signal is given while the main shaft is running.	Check the setting for number of needles at software installation.
	No needle position signal is detected during rotation of the main shaft.	Check the potentiometer (needle position sensor).
3A6	Incorrect ATH movable knife retract position	Check the position of ATH movable knife.
3C1	The power switch was turned on in the state the machine has been stopped by keeping the bar switch pressed to the left.	Turn off the power switch, and then, turn it on. If code "3C1" is still displayed, check the bar switch and the switch harness.
3D1	Backup battery voltage has decreased.	• Turn on the power supply of the machine and charge the battery. • Set parameters and input designs again.
3D6	There is abnormality in the program or CPU card.	Check the CPU card.
	The software is not correctly installed.	Install the software.
B01	Floppy disk format has an error.	• Format the floppy disk. • Use a new formatted floppy disk.
	An error occurred during read/write operation.	Copy other designs to a new floppy disk and dispose of the old floppy disk.
B02	Floppy disk management information has an error.	Copy data of the floppy disk to a new floppy disk and dispose of the old floppy disk.
B03	The write protect window of the floppy disk is open.	Close the write protect window.
B04	No floppy disk has been inserted.	Insert a floppy disk.
BC1	Selected design is not found on the floppy disk.	Select other design.
	No design is registered on the floppy disk.	
BC2	The design number specified as the writing destination already exists on the floppy disk.	Change the design number.
BC4	Design data was not correctly written from the memory to the floppy disk.	Retry writing.
BC5	Available capacity of the floppy disk is not sufficient.	Use a floppy disk which has enough available capacity.
C01	The FDD is disconnected or faulty.	Check the FDD connector. If there is no problem with the connection, replace the FDD unit.

1-1-2. Stop due to Normal Stop Factors

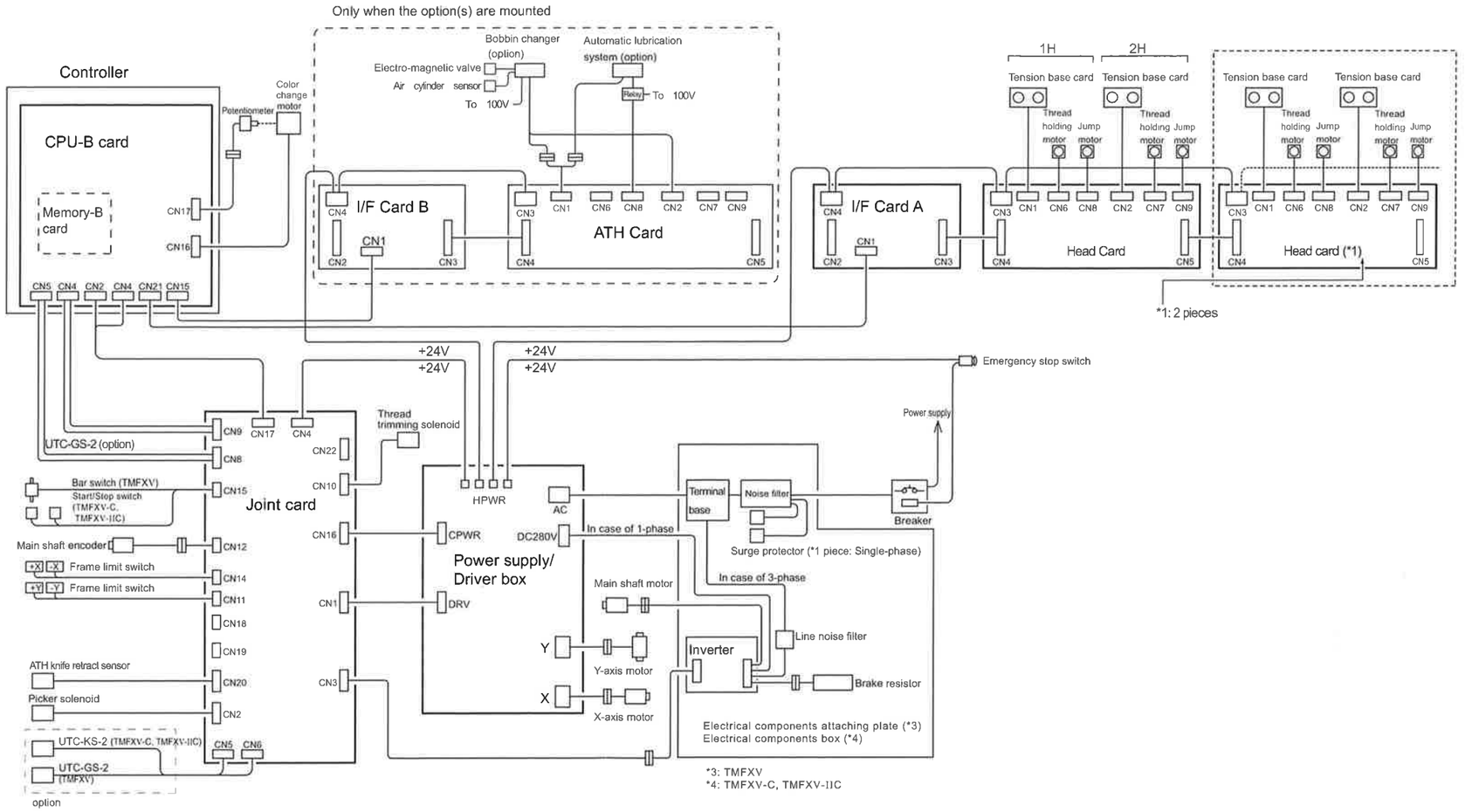
If a factor that suspends machine operation is executed, the machine stops and the corresponding code number is displayed at the screen. Confirm the displayed code and restart the machine by following the procedure indicated in the table below.

Code No.	Stop Factor	Corrective Action
1B1	Stop due to a frame stepping code.	These stops are not caused by abnormality or failure. Continue operation by pressing the START key or by conducting the frame back/forward operation, or press any operation key (except the manual frame travel keys).
1B2	Stop due to a stop code.	
1B3	Stop due to end code 1.	
1B4	Stop due to a thread trimming code.	
1B5	Stop due to a sequin code.	Manually move up/down the sequin device and then start the machine.
1C1	Stop by pressing the bar switch during frame stepping.	Either start the machine or conduct frame back/forward.
1D1	Stop at the start of all-head embroidery due to the stop setting.	Start the machine and continue embroidery.

1-2. Trouble Shooting

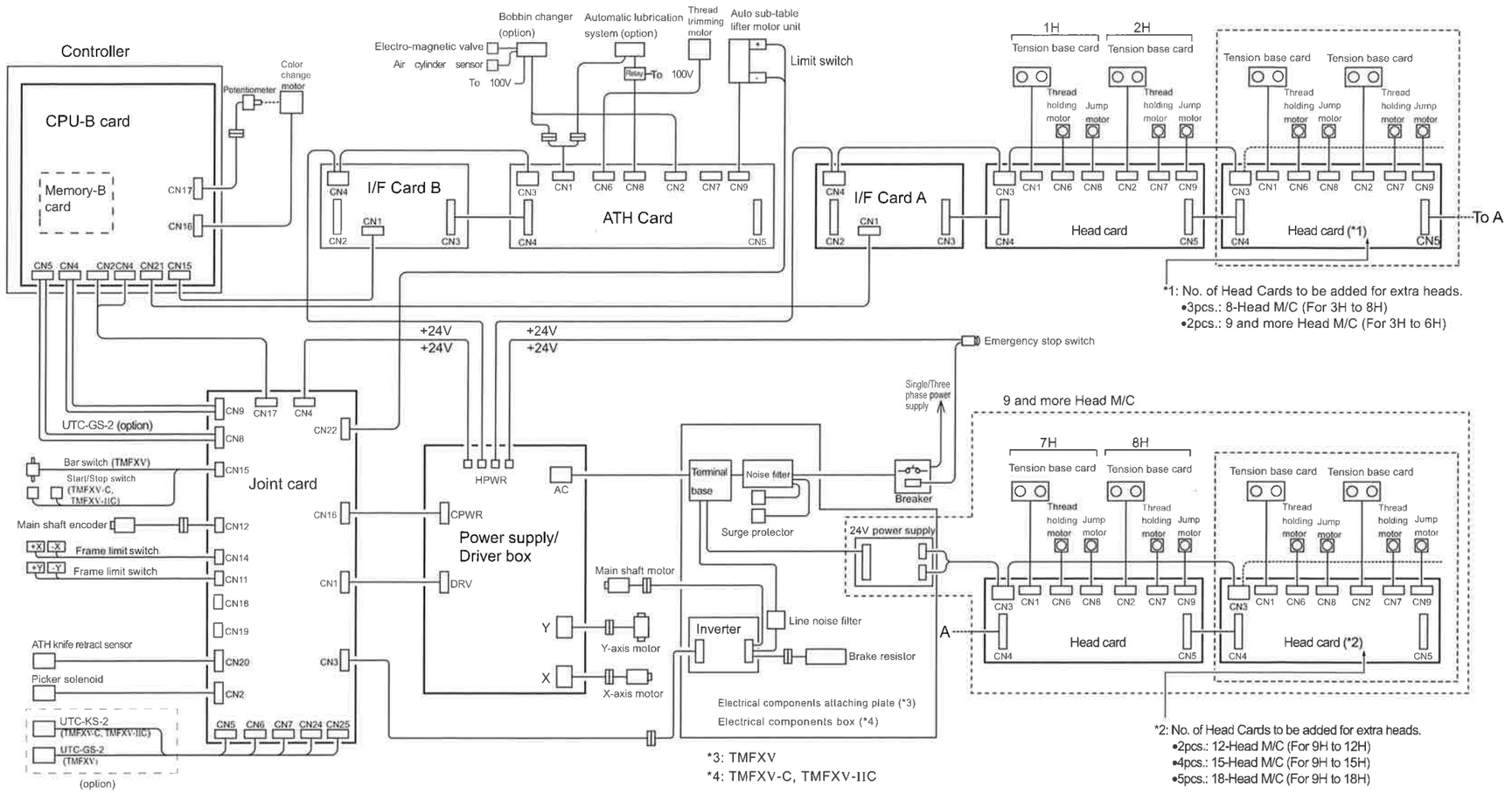
	Cause	Adjustment
Machine cannot start	1. Loose or broken belts	Adjust the belt tension or replace the belt.
	2. Needle position signal, NOT detected.	Adjust the needle position so that needle position signal is properly displayed in the needle position column on the operation panel.
	3. Alarm lamp on the driver box (unit) is ON.	Switch the power from OFF to ON.
	4. Poor connection of power supply box connectors.	Securely connect the connectors.
Stop position error	1. Loose or soiled belt	Adjust the belt tension or clean the belt.
	2. Seizure of driving parts	Adjust/replace the rotary hooks and/or needle bar drive system.
Incorrect color changing	1. Stop position is incorrect.	Adjust the position.
	2. Position of take-up lever is wrong.	Adjust the position of the take-up lever at the stop position so that its position is the same as others.
	3. Needle position NOT detected.	Adjust the needle position so that needle position is properly indicated in the manual color change section on the operation panel.
Thread detection error	1. Poor contact between thread take-up spring and bushing	Clean and adjust the position of thread take-up spring and bushing.
Jump error	1. Incorrect positioning of parts related to needle bar drive system	Adjust the attaching position of the needle bar reciprocator set with the upper dead point stopper.

ELECTRICAL SYSTEM DIAGRAM (2 - 6H)



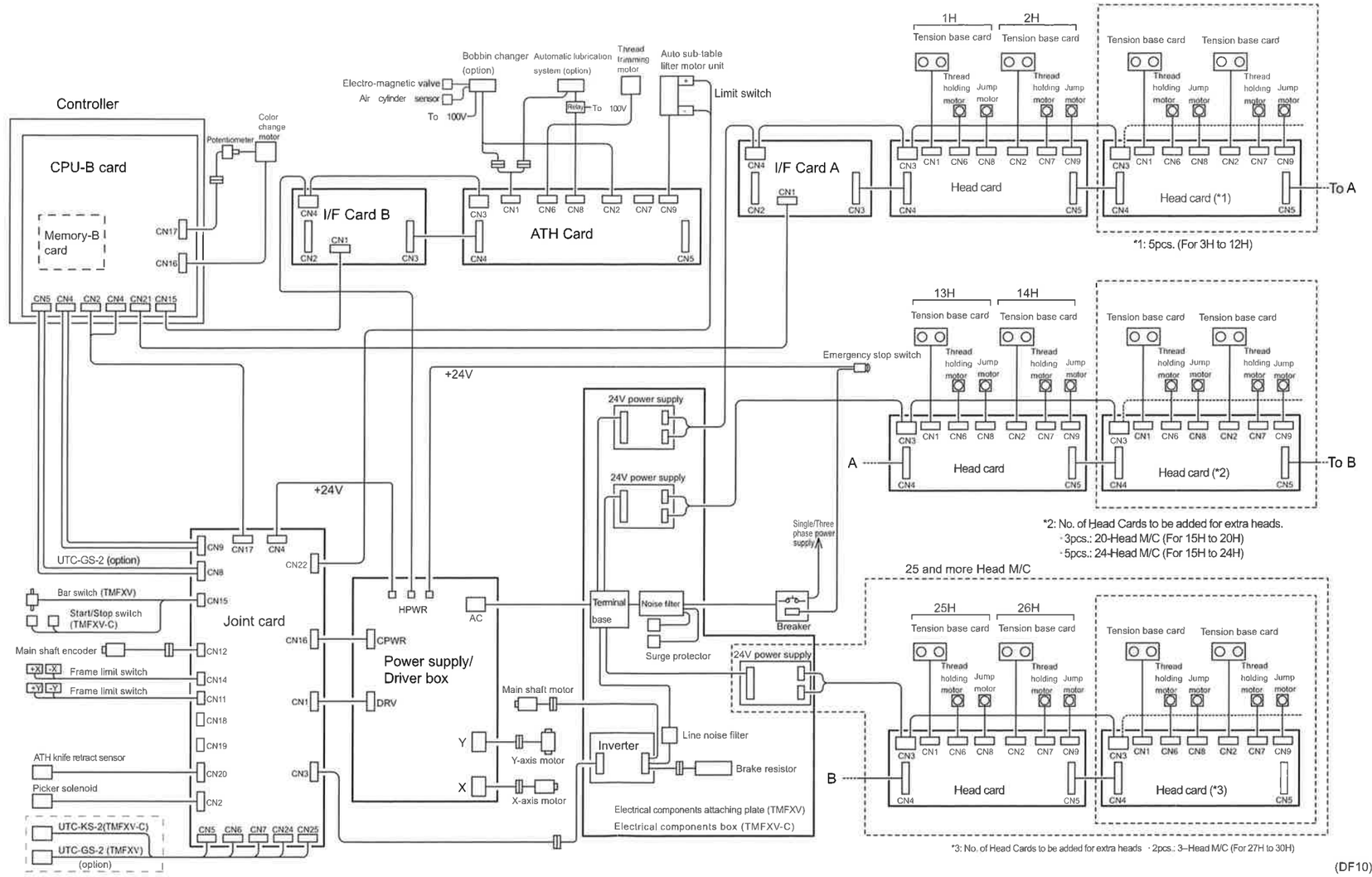
(FD06)

ELECTRICAL SYSTEM DIAGRAM (7 - 18H)



(FD06)

ELECTRICAL SYSTEM DIAGRAM (19 - 30H)



(DF10)

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