TAJIMA

INSTRUCTION MANUAL

TME-H (Type Ⅱ)
TME-HC (Type Ⅱ)
TMEF-H (Type Ⅱ, Ⅲ)
TMEF-HC (Type Ⅰ, Ⅱ)

(9312)

TAJIMA

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1. CAUTIONS ON MACHINE OPERATION

(1) Make sure the power switch is OFF before turning the main shaft manually (for example to perform adjustments).

(2) Be particularly careful when starting the machine, as moving parts will start operating immediately when the bar switch is pushed or the START button is pressed.

(3) Never touch moving parts (needles, frame, rotary hooks, shafts, pulleys, belts, etc.) while the machine is running.

(4) Do not remove the covers of the shafts, pulleys, belts, etc. while the machine is running. Do not operate the machine while the covers are removed.

(5) Keep bobbins, needles, tools, etc., out of the grooves in the machine table.

(6) Make sure the main power switch is OFF before opening the power supply box or any other electrical box. Do not turn the power switch ON while any of these boxes are open.

(7) Always use TAJIMA-authorized replacement parts.

2. FEATURES AND ELECTRICAL SPECIFICATIONS

■ Features

(1) MULTIPLEX MEMORY

The memory can accommodate up to 99 designs.

(2) MIRROR IMAGE CONVERSION (COORDINATE CHANGE)

Any of sixteen design orientations, achieved through combinations of rotation (in 45° increments) and reflection in the vertical and horizontal axes, can be selected in a simple key operation.

(3) SCALE UP/DOWN FUNCTION

It is possible to reduce or enlarge embroidery designs in the range 50% to 200% in increments of 1%.

(4) AUTOMATIC NEEDLE BAR SELECTION

A sequence of up to 99 needle bar selections can be set.

(5) AUTOMATIC REPEAT OPERATION

Up to 81 design repetitions can be set.

(6) AUTOMATIC OFFSET

The frame can be automatically returned to an offset point when embroidery finishes to make it easier to perform operations such as changing the frame. It is also possible to preset an offset code in the EDIT mode so that the frame will automatically move toward the operator at the appropriate point during embroidery to make it easier to place applique fabrics ("automatic free-setting offset" function).

(7) MANUAL OFFSET

The frame can be manually moved toward the operator for easier placement of applique fabrics, thread trimming, etc., during an embroidery operation. Afterwards, the frame can be returned to its former position, and operation resumed, by a simple key operation.

(8) ORIGIN RETURN

The frame can be returned to the design start point during embroidery operation. If the design start point does not coincide with the design end point, the frame can be either manually or automatically returned to the design start point after completing the design.

(9) FRAME FORWARD

The frame can be moved in the stitching direction without stitching.

(10) FRAME BACK

When the thread breaks or runs out, the frame can be moved back to the origin of the design in the memory operation or up to 350 stitches in the tape operation to allow repair of the design.

(11) INDEPENDENT HEAD OPERATION

The head at which a thread has broken can be operated independently while the rest of the heads remain idle.

(12) STOP FACTOR DISPLAY

(13) R.P.M. DISPLAY

(14) MAIN SHAFT SPEED SETTING

It is possible to set the high speed and low speed independently.

(15) REMAINING MEMORY DISPLAY

The available memory capacity in terms of number of stitches is displayed.

(16) COMPATIBILITY WITH BOTH TERNARY AND BINARY TAPE CODES

(17) EDIT MODE

Stitch data and function codes (jump, stop, ATH, offset and high/low speeds) can be erased, modified, or inserted.

(18) AUTOMATIC THREAD TRIMMING & HOLDING DEVICE (ATH)

The ATH device can be operated automatically by commands in the design tape, improving the quality of finished products as well as productivity. Manual ATH operations are also possible at any point in the design, regardless of tape contents.

(19) NETWORK CONNECTION

System software to allow connection to the NW-II (TAJIMA Two-Way Network System) is provided as a standard feature. This feature makes a network system easily introduced.

Electrical Specifications

Any deviation from the requirements will result in malfunction.

(1) Power source

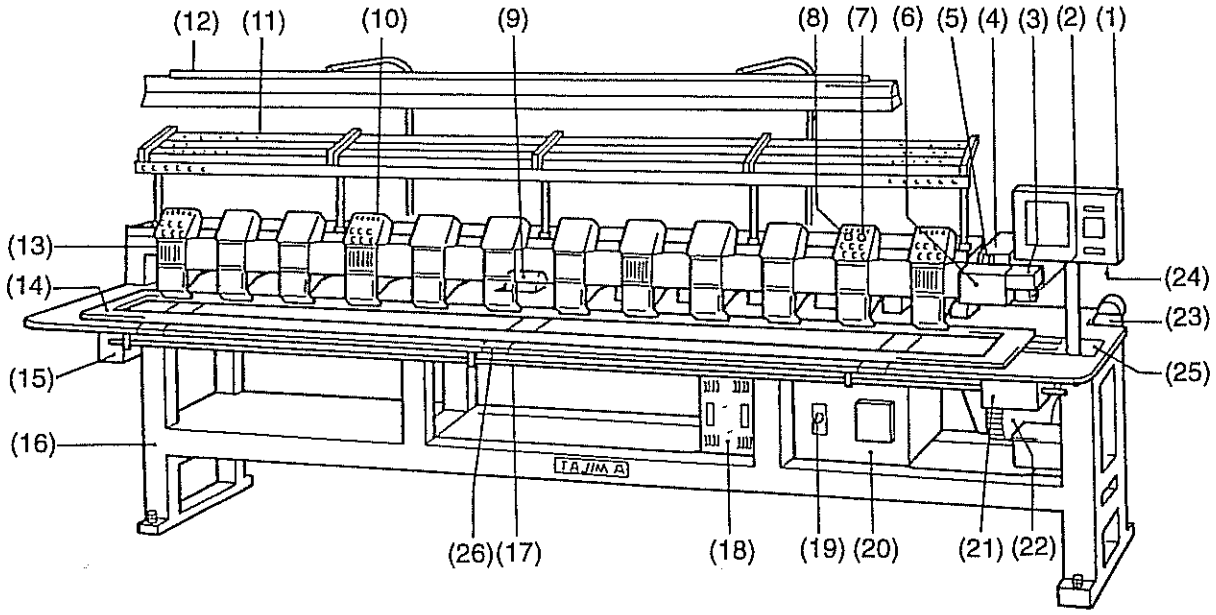
(a)	Voltage	:	±10% of the rated voltage
(b)	Source capacity and power consumption	:	2.4 KVA, 1.1 kW
(c)	Insulation resistance	:	10 M Ohms or greater (measured with 500V insulation tester)

(2) Installation environment

(a)	Ambient temperature	:	0 to 40°C (32 to 104°F) for operation –10 to 60°C (14 to 140°F) for storage
(b)	Humidity	:	45 to 85% RH, no condensation
(c)	Grounding	:	The earth cable must be properly grounded (grounding resistance equal to or below 100 ohms).

3. PART NOMENCLATURE

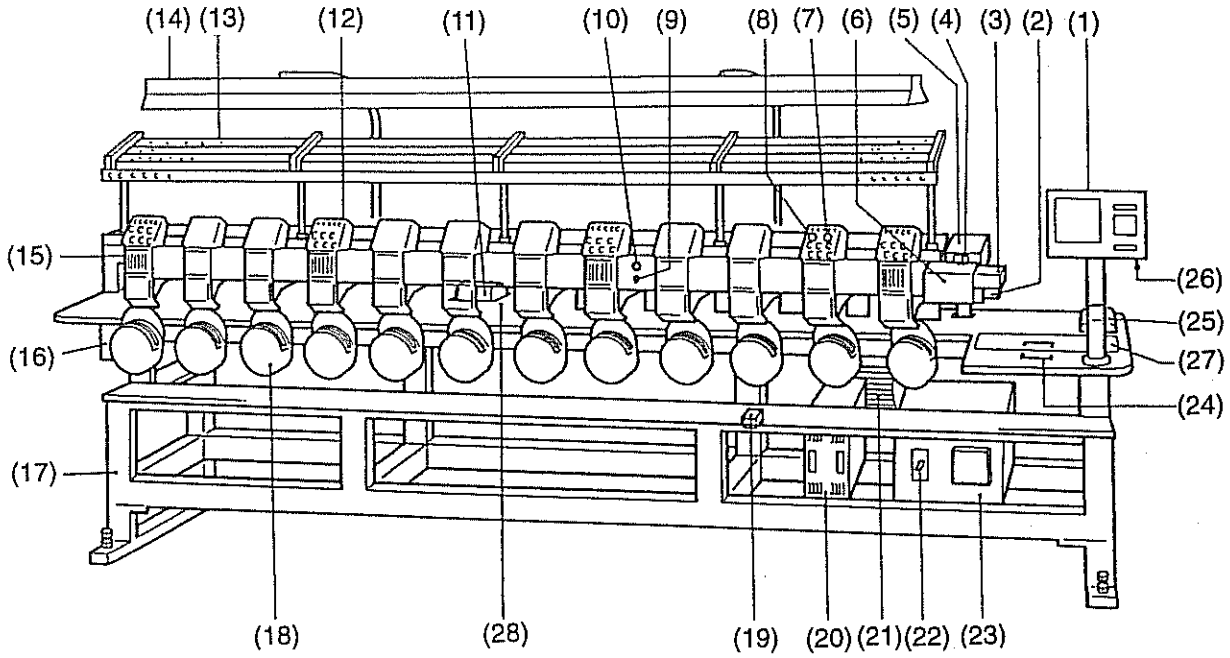
■ TME-H (Type-II)



(1)	Operation panel/controller	(14)	Embroidery frame
(2)	Color change motor	(15)	Thread trimming cam box
(3)	Needle position detector	(16)	Leg
(4)	TC joint box	(17)	Bar switch
(5)	Rotary encoder	(18)	Driver box
(6)	Color change box	(19)	Power switch
(7)	Tension base switch	(20)	Power supply box
(8)	Thread breakage indicator lamp	(21)	Bar switch box
(9)	Y-axis pulse motor	(22)	Main shaft motor
(10)	Individual tension base	(23)	X-axis pulse motor
(11)	Thread guide	(24)	Connector for an 8RE or other optional equipment
(12)	Fluorescent lights	(25)	X-axis driver system
(13)	Needle bar case	(26)	Y-axis driver system

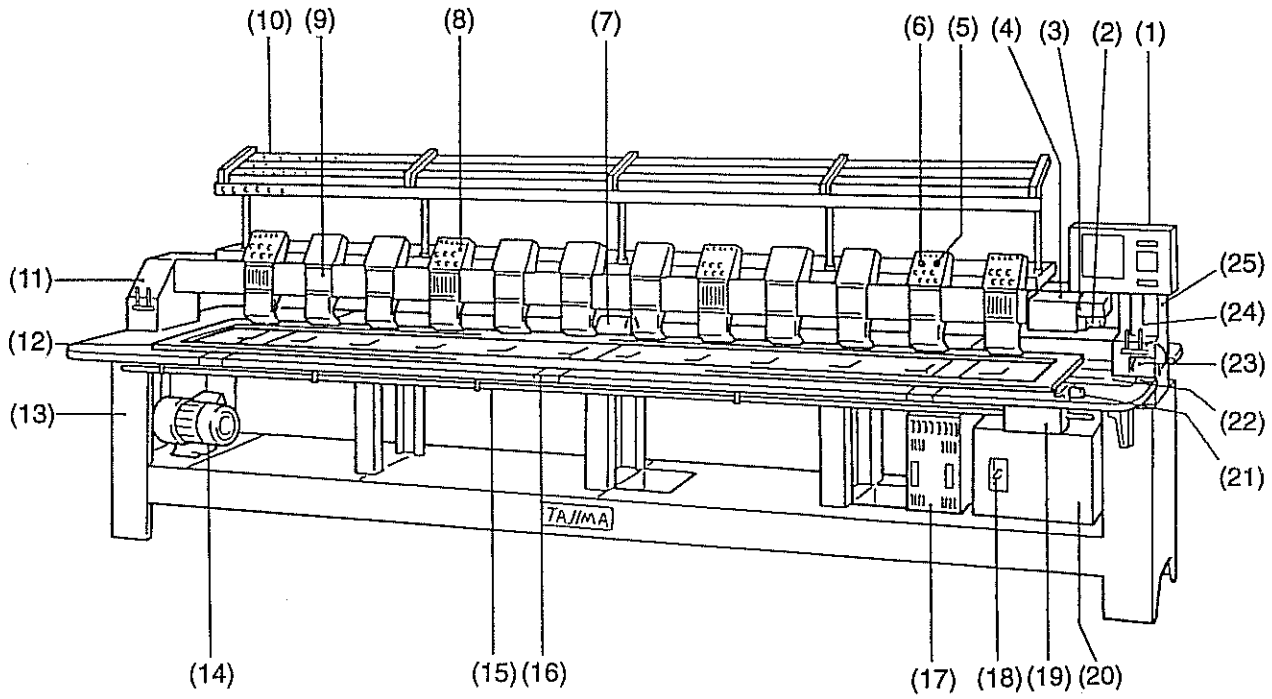
■ TME-HC (Type-II)

* Cap frame specification



(1) Operation panel/controller
(2) Color change motor
(3) Needle position detector
(4) Rotary encoder
(5) TC joint box
(6) Color change box
(7) Tension base switch
(8) Thread breakage indicator lamp
(9) Start switch
(10) Stop switch
(11) Y-axis pulse motor
(12) Individual tension base
(13) Thread guide
(14) Fluorescent lights
(15) Needle bar case
(16) Thread trimming cam box
(17) Leg
(18) Cap frame
(19) Frame limit switch box
(20) Driver box
(21) Main shaft motor
(22) Power switch
(23) Power supply box
(24) Cap frame origin sensor
(25) X-axis pulse motor
(26) Connector for an 8RE or other optional equipment
(27) X-axis driver system
(28) Y-axis driver system

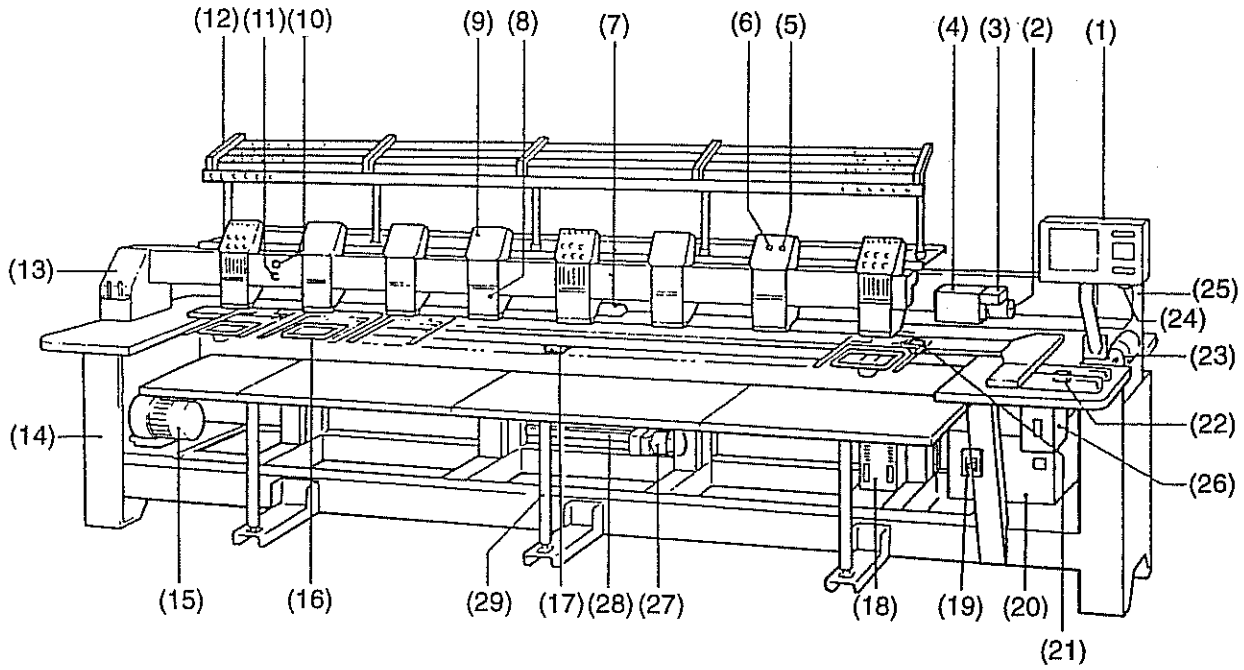
■ TMEF-H (Type-II, III)



(1) Operation panel/controller
(2) Color change motor
(3) Needle position detector
(4) Color change box
(5) Tension base switch
(6) Thread breakage indicator lamp
(7) Y-axis pulse motor
(8) Individual tension base
(9) Needle bar case
(10) Thread guide
(11) Left-end box
(12) Embroidery frame
(13) Leg
(14) Main shaft motor
(15) Bar switch
(16) Y-axis driver system
(17) Driver box
(18) Power switch
(19) Bar switch box
(20) Power supply box
(21) Rotary encoder
(22) X-axis driver system
(23) X-axis pulse motor
(24) Connector for an 8RE or other optional equipment
(25) Right-end box

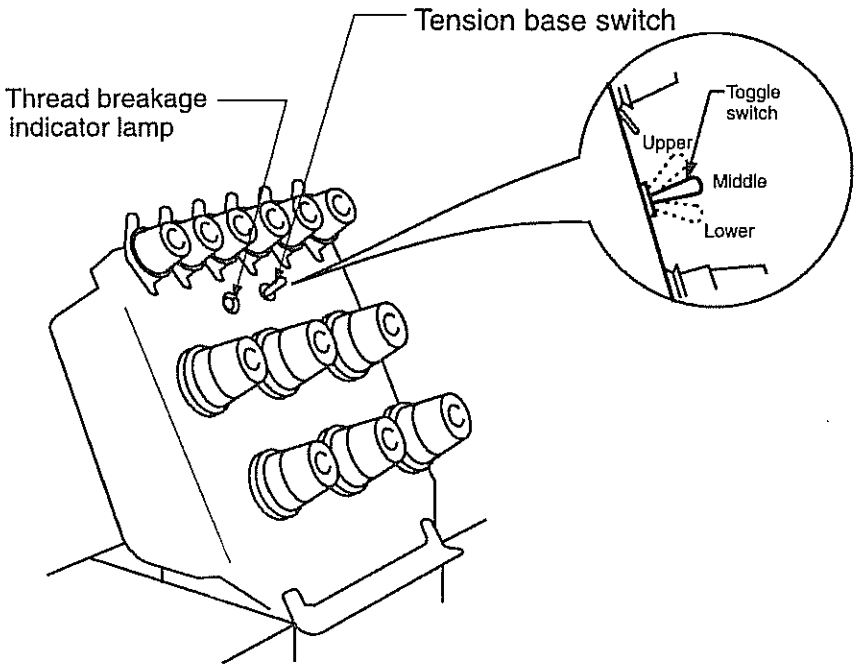
■ TMEF-HC (Type-I, II)

* Tubular goods frame specification



(1) Operation panel/controller
(2) Color change motor
(3) Needle position detector
(4) Color change box
(5) Tension base switch
(6) Thread breakage indicator lamp
(7) Y-axis pulse motor
(8) Needle bar case
(9) Individual tension base
(10) Stop switch
(11) Start switch
(12) Thread guide
(13) Left-end box
(14) Leg
(15) Main shaft motor
(16) Tubular goods frame
(17) Frame limit switch box
(18) Driver box
(19) Power switch
(20) Power supply box
(21) Rotary encoder
(22) Cap frame origin sensor
(23) X-axis pulse motor
(24) Connector for an 8RE or other optional equipment
(25) Right-end box
(26) Auto sub table switch box
(27) Auto sub table motor
(28) Hydraulic pump
(29) Hydraulic cylinder

4. DESCRIPTION OF THE TENSION BASE SWITCH AND THREAD BREAKAGE INDICATOR LAMP



■ Tension base switches

- During normal operation, leave the toggle switch at the middle position.
- When the machine has stopped due to detection of a thread break, use the frame back function to return the frame to the point at which the thread break occurred and restart the machine to mend the design. Only the head whose thread broke will operate. After the mending stitches are finished, embroidering will start with all heads from the preset all-head sewing start point. If the "selection to stop / not to stop at the all-head sewing start point" (see page 51) has been made for "ON: Stop", the machine will stop at the set point (display: ! !). Restart the machine to start embroidering.

SUPPLEMENT: To resume operation from a point reached using the frame back function (regardless of whether thread breakage has been detected or not), flick the toggle switch to the upper position (on release, it will be returned to the middle position by a return spring).

- To lock the needle bars at a particular head to prevent it from performing embroidery, flick the toggle switch at that head to the lower position.

■ Thread breakage indicator lamp

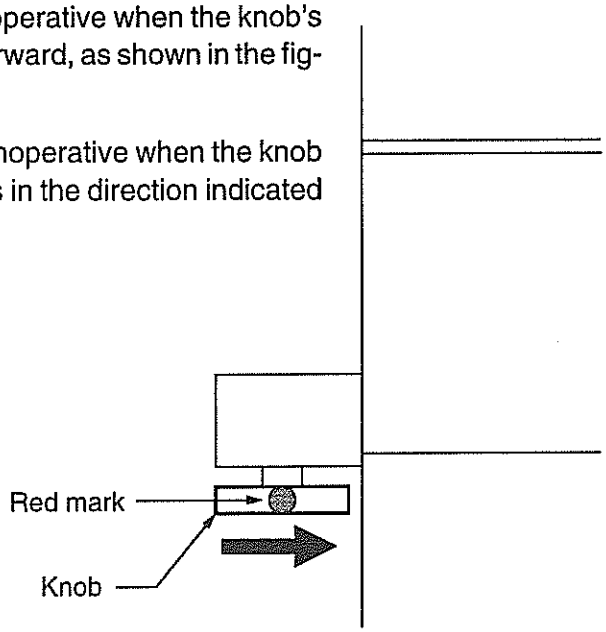
- This lamp lights when an upper thread breakage is detected.

SUPPLEMENT: This lamp will flash when an under thread breakage is detected by an optional under thread breakage detector (UTC).

5. DESCRIPTION OF THE MECHANICAL CLUTCH

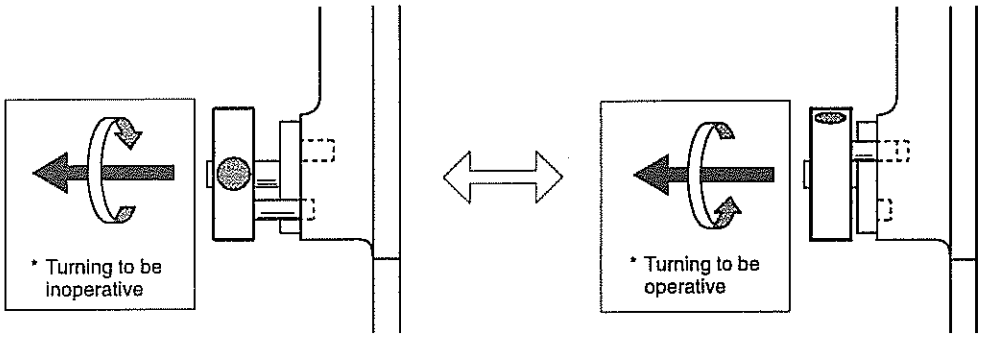
■ TME-H, Type-II, TME-HC Type II, TMEF-H Type II, TMEF-HC Type I

- Needle bar drive is operative when the knob's red mark is facing forward, as shown in the figure.
- Needle bar drive is inoperative when the knob is turned 90 degrees in the direction indicated by the arrow.

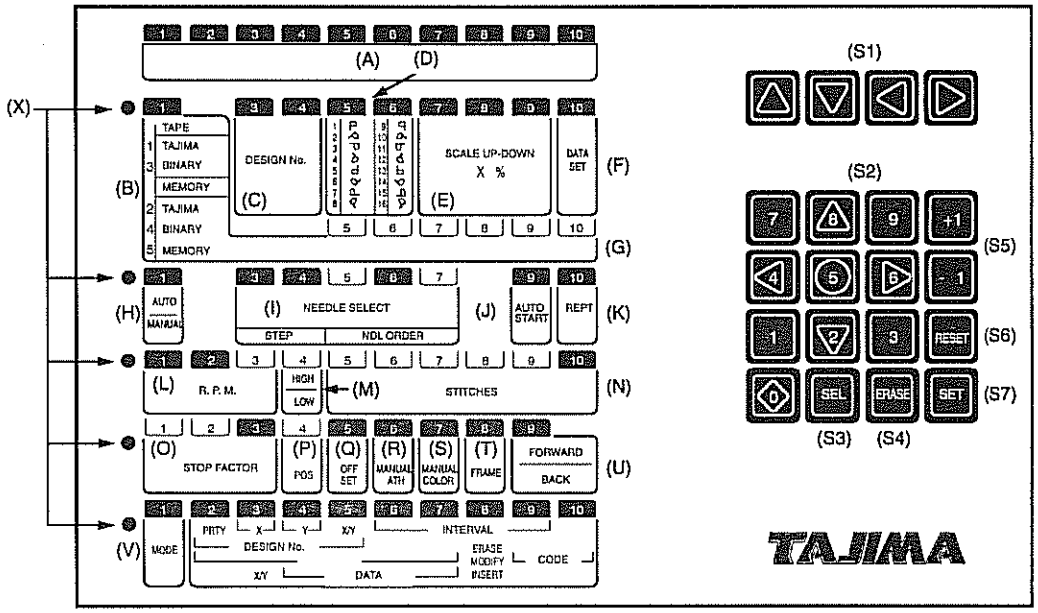


■ TMEF-H Type III, TMEF-HC Type II

- Operative
- Inoperative



6. OPERATION PANEL DISPLAY, AND FUNCTIONS OF THE OPERATION PANEL KEYS



(A) Display

Command descriptions, speeds, stop factors, etc., are displayed here.

(B) TAPE

The tape code is set at this position.

(C) DESIGN No.

The design number is designated at this position.

(D) Mirror image conversion (coordinate change)

The orientation of the design (selected from the 16 indicated options) is set at this position.

(E) SCALE UP-DOWN

The scale of the design is set at this position. Reduction and enlargement in 1% increments is possible in the range 50% to 200%.

(F) DATA SET

Data is set at this position.

(G) REMAINING MEMORY

The available memory capacity, in terms of number of stitches, is displayed here.

(H) AUTO/MANUAL

Automatic or manual color changing is selected at this position.

(I) NEEDLE SELECT

The needle bar sequence for automatic color changes is set at this position.

(J) AUTO START

The selection of manual or automatic starting after color changes is set at this position.

(K) REPT

The number of design repetitions is set at this position.

(L) R.P.M.

The r.p.m. can be set and changed at this position.

(M) SPEED

The high speed/low speed setting is displayed here.

(N) STITCHES

The number of stitches that have been sewn is displayed here.

(O) STOP FACTOR

If the machine stops, the cause is displayed here.

(P) POS.

The display at this position indicates whether the machine is stopped at the fixed position or not.

(Q) OFFSET

Offset points are set at this position.

(R) MANUAL – ATH

Manual ATH operation is set at this position.

(S) MANUAL – COLOR

Manual needle bar selections are set at this position.

(T) MANUAL – FRAME

Manual frame travel is enabled by a setting at this position.

(U) FORWARD/BACK

Frame-forward or frame-back motion is selected at this position.

(V) MODE

The selection between REPEAT and EDIT is made at this position.

(W) Repetition/Editing

Repetition and editing settings are set at these positions.

(X) Cursor indicator LEDs

These LEDs indicate which row the cursor is located at.

(S1) Cursor movement keys

Used to move the cursor horizontally and vertically.

(S2) Number keys

Used to input numerical data, to move the frame manually, and to change the r.p.m.

(S3) SEL. key

Used to make selections between alternative settings.

(S4) ERASE key

Used to erase designs stored in memory.

(S5) Step (+1, –1) keys

Used to advance in steps when setting or confirming needle bar selections (the color change sequence).

(S6) RESET key

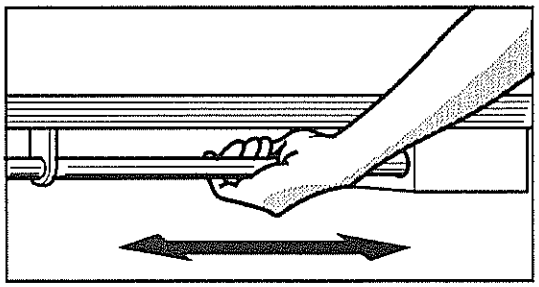
Used to reset stop factors and rewind the tape, and to stop the design tape running when writing data into memory.

(S7) SET key

Used to confirm settings.

7. BAR SWITCH OPERATIONS (TME-H (II), TMEF-H (II, III))

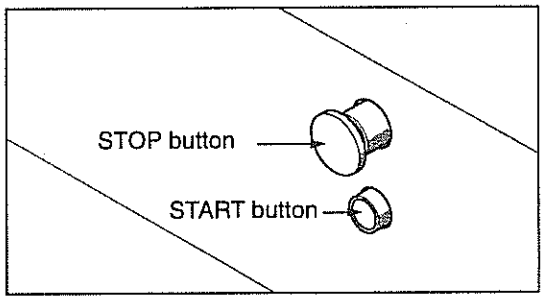
The effect of the bar switch operation will vary according to the machine condition (stopping or running) as given below.



Machine Condition / Bar Switch Operation	Stopping	Running
Push to the right, then release.	The machine starts sewing.	
Push to the right and hold.	The machine starts inching and continues until the bar switch is released.	
Push to the left, then release.	The frame moves backward or forward one stitch. (See page 33)	The machine stops.
Push to the left and hold. ↓ Push to left again, then release.	The machine starts frame-forward or frame-back motion. • If the bar switch is released before 10 stitches have been sewn the machine will stop immediately (frame back/forward motion is in 1-stitch units). • If the bar switch is released after 10 or more stitches have been sewn, frame back/forward motion will continue. ↓ Pushing the bar switch to the left again will stop frame back/forward motion.	The machine stops.

8. START AND STOP BUTTON OPERATIONS (TME-HC (II), TMEF-HC (I, II))

The effect of the START and STOP button operations will vary according to the machine condition (stopping or running) as given below.



Machine Condition / Switch Operation	Stopping	Running
Push and release the START button.	The machine starts sewing.	
Push and hold the START button.	The machine starts inching and continues until the START button is released.	
Push and release the STOP button.	The frame moves backward or forward one stitch. (See page 33)	The machine stops.
Push the STOP button.	The machine starts frame-forward or frame-back motion. • If the STOP button is released before 10 stitches have been sewn the machine will stop immediately (frame back/forward motion is in 1-stitch units). • If the STOP button is released after 10 or more stitches have been sewn, frame back/forward motion will continue. ↓ Push the STOP button again to stop the frame back/forward motion.	The machine stops.

9. BASIC EMBROIDERY OPERATION

POWER ON, TAPE SETTING

1 Turn ON the main power supply.

2 Turn ON the power switch on the power supply box.

3 Set the design tape.
* See page 15.

4 Set the tape code.
* See page 16.

5 Set the mirror image (coordinate change) conversion.
* See page 16.

6 Set the scale.
* See page 16.

7 Set the data.

MANUAL OPERATION

1 Select MANUAL at the AUTO/ MANUAL position.
* See page 22.

2 Set the r.p.m.
* See page 26.

3 Select the needle bar sequence.
* See page 32.

4 Manually move the frame to the design start point.
* See page 33.

5 Move the bar switch to the right (or press the start button) to start inching. Release the bar switch to start normal operation.

* Moving the bar switch to the left (or pressing the stop button) stops the machine.

AUTOMATIC OPERATION

1 Select AUTO at the AUTO/ MANUAL position.
* See page 22.

2 Set the needle bar selections.
* See page 22.

3 Select auto or manual starting.
* See page 24.

4 Set the number of design repetitions.
* See page 25.

5 Set the r.p.m.
* See page 26.

6 Manually move the frame to the design start point.
* See page 33.

7 Move the bar switch to the right (or press the start button) to start inching. Release the bar switch to start normal operation.

* Moving the bar switch to the left (or pressing the stop button) stops the machine.

NOTE: Automatic data setting on completion of a design

When tape code 1 or 3 is used with the 8RE or the TFD, data is NOT automatically set on completion of a design.

NOTE: The SET key

Do not press the SET key after the machine has been started in tape or memory operation. In either case, the design will be stitched with some section(s) missing:

a) Every time this key is pressed during tape operation, 21 stitches are read in advance from the current position, resulting in the loss of 21 stitches.

b) Pressing the SET key during memory operation will reset the stitch data that is being embroidered. Then the first 21 stitches from the design start point will be read and operation continued, damaging the design.

CAUTION: Turning OFF the power supply

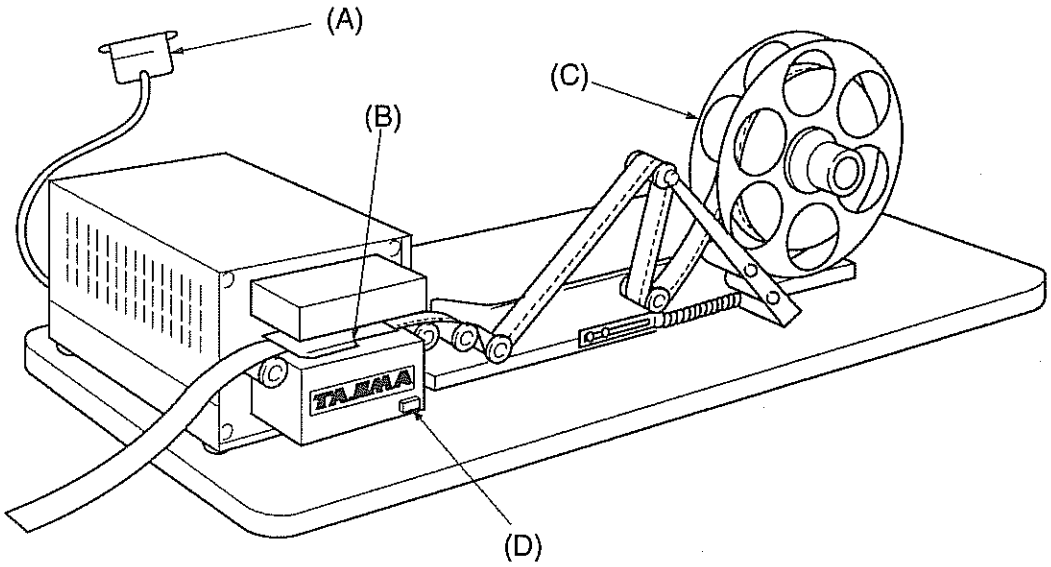
Be sure to follow this procedure when turning OFF the power, whether embroidery is finished or not:

1) Stop the machine and make sure the fixed position lamp comes ON.

2) Turn OFF the power switch on the power supply box.

3) Turn OFF the power supply of your facility.

10. TAPE SETTING PROCEDURE (USING AN 8RE READER)



(1) Turn OFF the power switch on the power supply box.

(2) Plug connector (A) into the operation panel/controller box.

(3) Turn ON the power switch of the power supply box.

(4) Set the tape into tape reel (C).

(5) Lift presser plate (B), set the tape correctly on the reader and then push down the presser plate.

(6) Before performing the DATA SET operation, be sure to turn ON the PTR power switch (D).

CAUTION: Performing the DATA SET operation while this switch is OFF will result in a PTR error. If this happens, turn ON the PTR switch and perform the DATA SET operation again.

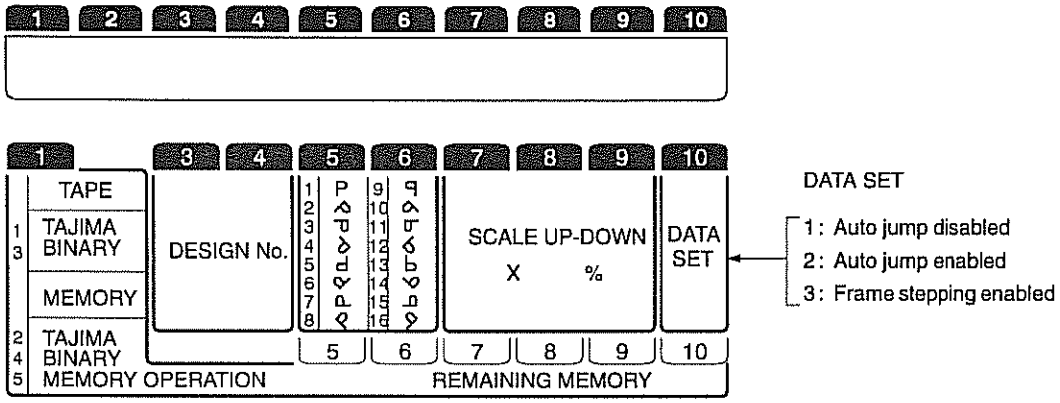
(7) After tape reading is completed, be sure to turn OFF the PTR switch.

⚠ CAUTION **Do not disconnect or connect the 8RE reader or any other optional equipment while the power switch on the power supply box is ON.**

11. HOW TO USE THE OPERATION PANEL

■ 1st Row Cursor

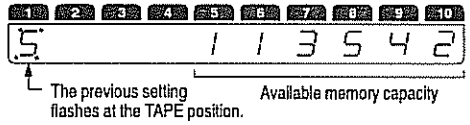
The tape code, design number, mirror image (coordinate change) conversion, design reduction or enlargement, and auto jump function on/off selection are set in the first row, and the available memory capacity is displayed in this row also.



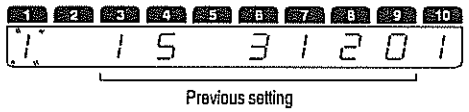
Example 1: Setting mirror image "P", with a scale factor of 100%, when using a TAJIMA tape

(The flash mark ◇◇ indicates a flashing numeral or symbol, or the cursor position.)

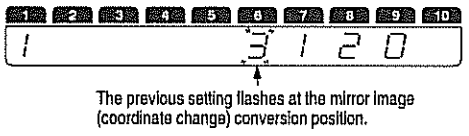
(1) Move the cursor to the TAPE position, [1].



(2) Input "1" using the number keys (to select TAJIMA tape).

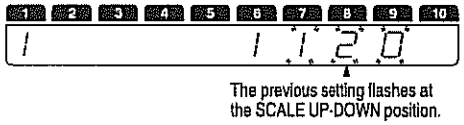


(3) Press the SET key.

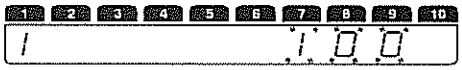


(4) Input "1" using the number keys (to select mirror image "P").

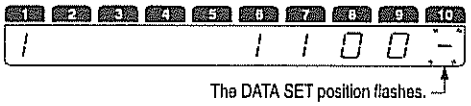
(5) Press the SET key.



(6) Input "1, 0, 0" using the number keys (to set a scale factor of 100%).



(7) Press the SET key.



(8) Input "1" or "2" using the number keys (to make the auto jump selection).

* If "1" is set the auto jump function is disabled.
  If "2" is set, the auto jump function is enabled.
* Auto jump function
  If a stitch in the design data exceeds 8.1 mm, this function automatically divides it into jump data. However, the jump data generated by the auto jump function is not added to the number of jump data or converted to frame stepping codes.

(9) Press the SET key.

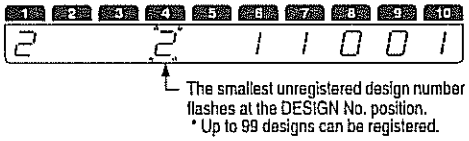
* The cursor will move to the MANUAL-FRAME position in the 4th row. (see page 28)

Example 2: Writing data into memory as design number 3 with the mirror image "P" when using a TAJIMA tape

(1) Move the cursor to the TAPE position, [1].

(2) Input "2" using the number keys (to select TAJIMA tape).

(3) Press the SET key.



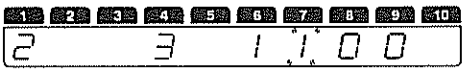
(4) Input "3" using the number keys (to set the design number to be registered).

(5) Press the SET key.

* If the designated design number has already been registered, SET key operation becomes invalid. (An error indication will be displayed.)

(6) Input "1" using the number keys (to select mirror image "P").

(7) Press the SET key.



* Regardless of the set scale factor, tape data is always stored in memory with a scale factor of 100%.

(8) Press the SET key.

(9) Input "1" using the number keys (to set data input with the auto jump function disabled).

* If the auto jump function is to be used, "2" is input here.

(10) Press the SET key.

* The cursor will move to the MANUAL-FRAME position in the 4th row. (see page 28)

CAUTIONS APPLICABLE WHEN USING TAPE CODE 2 OR 4

Operation:

1. After setting the tape code, registering the design number and setting the auto jump function enabled/disabled status, the tape will be read and the tape data will be stored in memory (machine operation can be started by using the bar switch or START button at this time).
2. To stop tape reading, press the RESET key. (If the machine is operating, it will continue to embroider up to the last data stored in memory and then stop in an error status.)
3. If the RESET key is pressed and the machine restarted, the machine will operate while the tape is being read.

SET key:

If, after the tape is stopped by pressing the RESET key while data is being written to memory, the SET key is pressed by mistake, the data stored in memory is erased and writing to memory starts again from the point where the tape was stopped.

Example 3: Embroidering design number 4 from memory in mirror image " ⇦ " with a scale factor of 130% and the auto jump function enabled

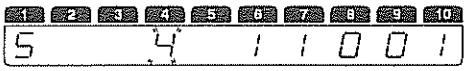
(1) Move the cursor to the TAPE position, [1].

(2) Input "5" using the number keys (to select operation from memory).

(3) Press the SET key.

* If no designs are registered, an error indication will be displayed.

(4) Input "4" using the number keys (to select the registered design number).



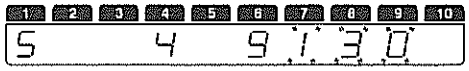
(5) Press the SET key.

* If no design is registered under the designated number, an error indication will be displayed.

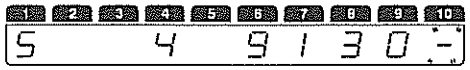
(6) Input "9" using the number keys (to set mirror image " ⇦ ").

(7) Press the SET key.

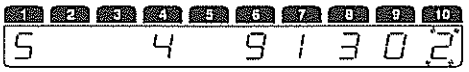
(8) Input "1, 3, 0" using the number keys (to set the scale factor percentage).



(9) Press the SET key.



(10) Input "2" using the number keys (to set data input with the auto jump function enabled).



(11) Press the SET key.

* The cursor will move to the MANUAL-FRAME position in the 4th row. (see page 28)

Example 4: Erasing designs stored in memory

(1) Move the cursor to the TAPE position, [1].

(2) Input "5" using the number keys.

(3) Press the SET key.

(4) Input "0" using the number keys (to select erasure of the entire memory contents).

(5) Press the ERASE key.

(6) Press the SET key.

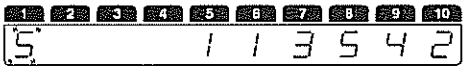
* Continuously lit while erasing, flashes on completion.

CAUTION: Do not switch off the power during erasure.

Example 5: Erasing design number 3 from memory

(1) Move the cursor to the TAPE position, [1].

(2) Input "5" using the number keys.

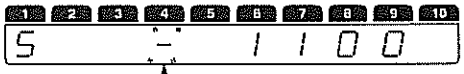


(3) Press the SET key.

(4) Input "3" using the number keys (to set the design number to be erased).

(5) Press the ERASE key.

(6) Press the SET key.



* Continuously lit while erasing, flashes on completion.

CAUTION: Do not switch off the power during erasure.

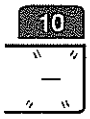
<Converting Jump Data into Frame Stepping Data>

Set continuous jump data to be converted to frame stepping or normal jump.

(1) Move the cursor to the DATA SET position.

(2) Input "3" using the number keys (to select setting of frame stepping data).

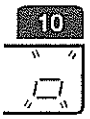
(3) Press the SET key.



The ATH operates, and jump conversion is performed, in accordance with the setting of NJ-S3/5 in DSW1.

* Refer to page 48 for details on DSW1.

(4) Press the SEL. key.



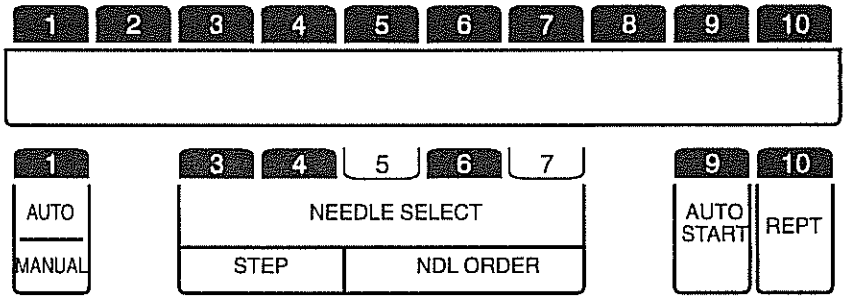
The setting of NJ-S3/5 in DSW1 is disregarded and the ATH does not operate; normal jump operations are performed.

(5) Press the SET key.

NOTE: The setting established in the above procedure is maintained unless it is reset.

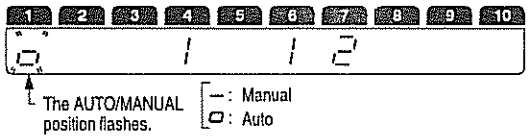
■ 2nd Row Cursor

Automatic or manual color changing, needle bar sequence selections, automatic or manual starting after color changes, and design repetition settings are set in the second row.



Example 1: Changing the needle bar selection setting from 1, 2 to 3, 12, 1

(1) Move the cursor to the AUTO/MANUAL position, [1].



(2) Select AUTO by using the SEL. key.

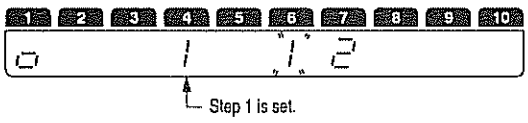
* Pressing the SEL. key alternately selects AUTO and MANUAL.

(3) Press the SET key.

* The cursor does not have to be moved to select MANUAL.

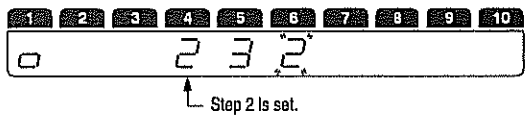
(4) Input "1" using the number keys (to set step 1).

(5) Press the SET key.

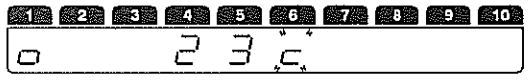


(6) Input "3" using the number keys (to set the needle bar used in step 1).

(7) Press the [+1] key.



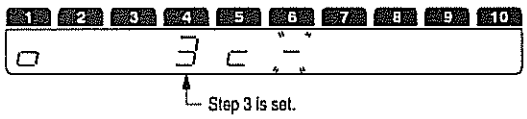
(8) Input "1, 2" using the number keys (to set the needle bar used in step 2).



* Needle bar numbers 10 and larger will be displayed as follows.

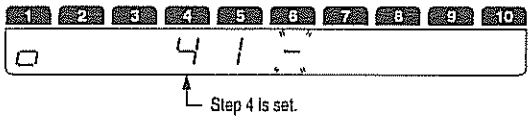
10 → A , 11 → b , 12 → c

(9) Press the [+1] key.



(10) Input "1" using the number keys (to set the needle bar used in step 3).

(11) Press the [+1] key.

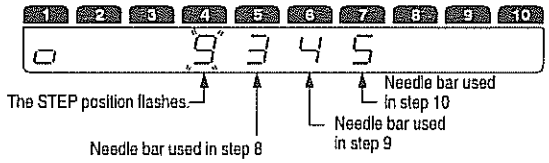


(12) Press the SET key.

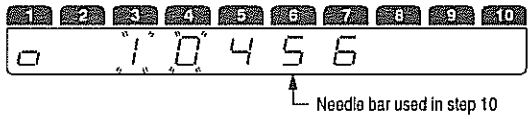
* The cursor will move to the AUTO START position in the same row. (see page 24)

Example 2: Confirming needle bar selections from step 9 to step 12 when 12 steps have been set

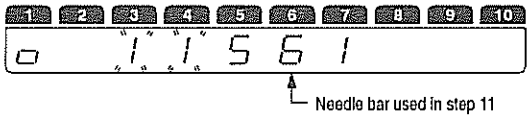
(1) Move the cursor to the NEEDLE SELECT "STEP" position, input "9" using the number keys, press the SET key, then move the cursor back to the STEP position.



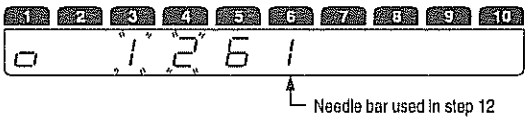
(2) Press the [+1] key.



(3) Press the [+1] key.



(4) Press the [+1] key.

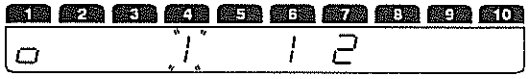


(5) Press the [+1] key.

* Pressing the [−1] key instead of [+1] will decrease the step number.

Example 3: Changing the needle bar selection setting in step 10 from 5 to 3

(1) Move the cursor to the NEEDLE SELECT "STEP" position.



(2) Input "1, 0" using the number keys (to set step 10).

* Values larger than step numbers which are already set and 0 are invalid.

(3) Press the SET key.

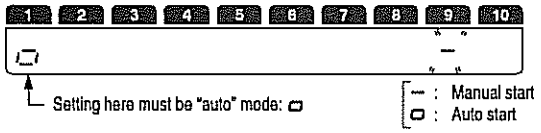
(4) Input "3" using the number keys (to set the new value).

(5) Press the [+1] key.

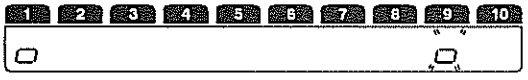
* The [–1] key is invalid.
* Do not press the SET key after (5). If it were pressed in the example above, the needle bar selection settings for step 11 and later steps would be canceled.

Example 4: Setting automatic starting after color changes

(1) Move the cursor to the AUTO START position.

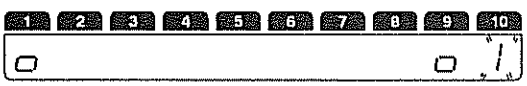


(2) Press the SEL. key (to select "AUTO").



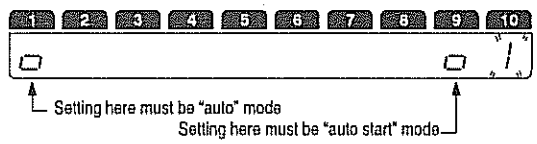
* Pressing the SEL. key alternately selects AUTO and MANUAL.

(3) Press the SET key.



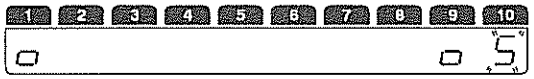
Example 5: Setting five repetitions (designs with design interval data)

(1) Move the cursor to the REPT position.



* Indicates AUTO COLOR CHANGE mode.
* Indicates AUTO START mode.

(2) Input "5" using the number keys (to set the number of repetitions).

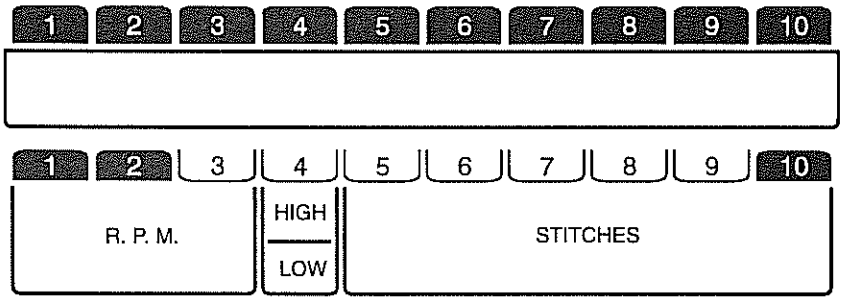


* A maximum of 9 repetitions can be set.
* If not making any repetitions, set the number of repetitions to "1", and set the X- and Y- direction repetition numbers in the "repeat" MODE settings (5th row cursor) to "1" as well.

(3) Press the SET key.

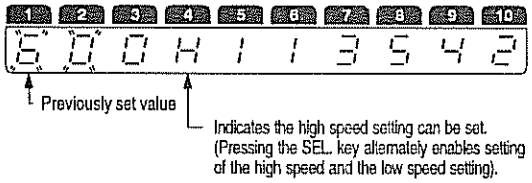
■ 3rd Row Cursor

The speed settings (H/L display) are set, and the number of stitches is reset, in the 3rd row.

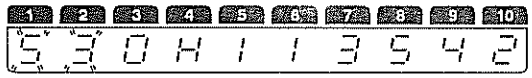


Example 1: Setting the high speed as 530 r.p.m. and the low speed as 400 r.p.m.

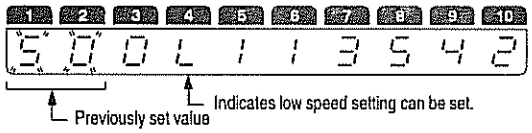
(1) Move the cursor to the R.P.M. position.



(2) Input "5, 3" using the number keys (to set 530 r.p.m.).

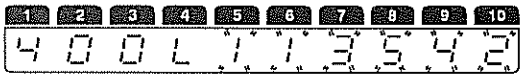


(3) Press the SEL. key (to switch to the low speed).



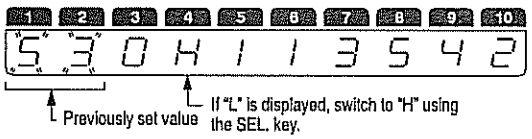
(4) Input "4, 0" using the number keys (to set 400 r.p.m.).

(5) Press the SET key.



Example 2: Setting the high speed as 600 r.p.m.

(1) Move the cursor to the R.P.M. position.

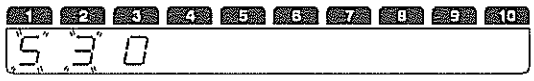


(2) Input "6, 0" using the number keys (to set 600 r.p.m.).

(3) Press the SET key.

<Changing Speed during Operation>

During operation, the cursor remains at the R.P.M. position.



■ To Increase the Speed

- Pressing the key once increases the speed by 10 r.p.m.
- Pressing the and keys together increases the speed by 50 r.p.m.

■ To Decrease the Speed

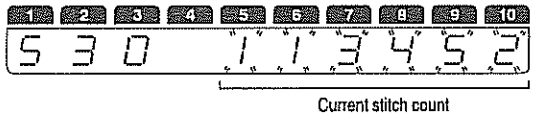
- Pressing the key once decreases the speed by 10 r.p.m.
- Pressing the and keys together decreases the speed by 50 r.p.m.

	High Speed	Low Speed
X, Y data	0.1 to 8.0 mm	8.1 to 12.7 mm
R.P.M.	250 to 800 r.p.m.	250 to 600 r.p.m.

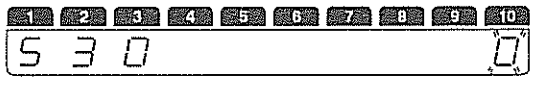
* If the high speed is set lower than the low speed, the low speed will be made the same as the high speed.
* If the low speed is set higher than the high speed, the high speed will be made the same as the low speed.
* When the HF switch in DSW1 is set to ON (the setting when the cap frame is used), the high speed will vary between 250 and 600 r.p.m., and the low speed will vary between 250 and 400 r.p.m.
* When SPEED-L switch in DSW1 is set to ON (the low speed setting), the high speed will vary between 250-600 r.p.m., and the low speed will vary between 250-450 r.p.m.
* The maximum speed will also depend on the embroidery space, design and materials.

<Resetting the current number of stitches to 0>

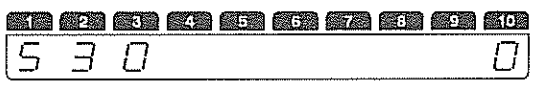
(1) Move the cursor to the STITCHES position.



(2) Input "0" using the number keys.

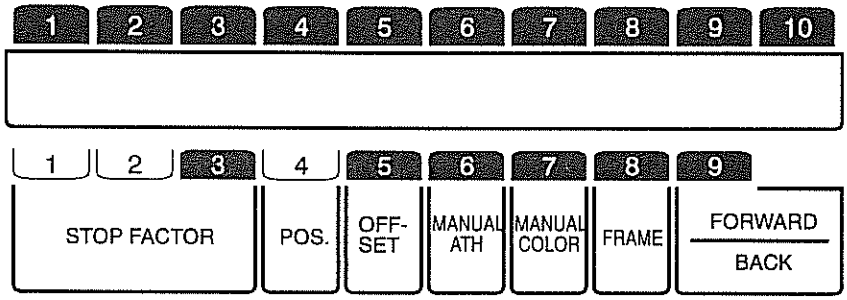


(3) Press the SET key.



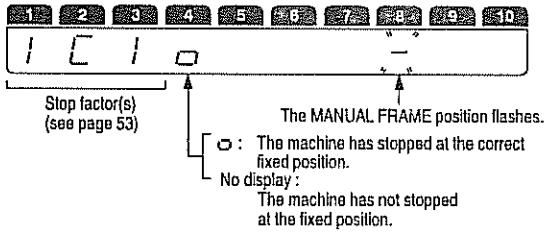
4th Row Cursor

Automatic and manual offsets, frame-forward and frame-back motion, manual ATH operations, manual color changes, manual frame travel, and origin return operations are set in the fourth row. Stop factors are displayed here, and there is an indicator that shows when the machine is at the fixed position.



<Display of Stop Factor(s) and Fixed Position>

Example: Display of Temporary Stop



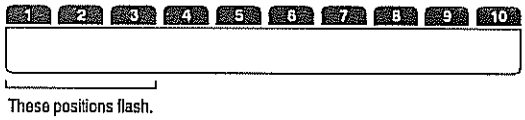
* 1 C 1 : Stop by the bar switch or the STOP button.
* The cursor automatically moves to the MANUAL – FRAME position if the machine has stopped at the fixed position.
* When a cap frame is used (DSW1 HF: ON), the position of the frame will be indicated at the FRAME position as shown below.

  C : Indicates that the frame is located on the +X axis.

  ] : Indicates that the frame is located on the –X axis.

Abnormal or Emergency Stop and Reset Operation

(1) Abnormal or emergency stop



* In the event of an emergency stop, the cursor stops at the STOP FACTOR position.

(2) Press the RESET key.

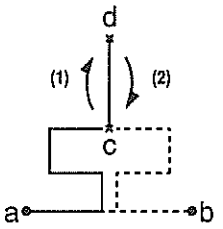
* In the event of an abnormal or emergency stop, the stop factor display is cleared by pressing the RESET key.
* When there is more than one stop factor for an abnormal or emergency stop, these factors can be displayed in sequence by repeatedly pressing the RESET key. Check every stop factor and clear all of them.
* Up to 10 stop factors can be stored and displayed.

<The Offset Functions>

The offset functions return the frame to a preset point (or points) on completion of a design or at any point during an embroidery operation, to make it easier to perform operations such as frame changing and thread trimming. There are three types of offset available:

Offsets — (1) Manual offset
Offsets — (2) Auto offset
Offsets — (3) Auto free-setting offset

(1) Manual offset (See page 30 for operation instructions.)



a : Embroidery start point
b : Embroidery end point
c : Chosen point in the design
d : Point reached by manual frame travel

(1) Manual frame travel
(2) Automatic frame travel

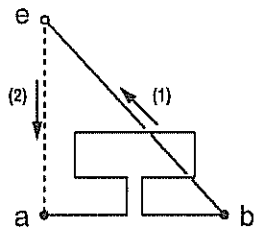
(a) Stop the machine, using the bar switch, at the chosen point "c".

(b) Manually move the frame to point "d" to perform the intended operation (to place applique fabric, for example).

(c) The frame is automatically returned to the previous point "c" by a key operation at the operation panel.

(d) Start the machine with the bar switch to continue operation.

(2) Auto offset (See page 27 for operation instructions.)



a : Embroidery start point
b : Embroidery end point
e : Offset point

(1): Automatic frame travel
(2): Automatic frame travel performed when operation is restarted.

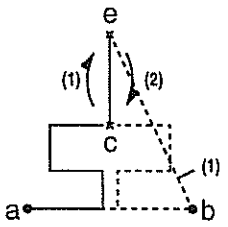
(a) Set the offset point "e" using the OFFSET function in the 4th row.

(b) The frame automatically returns to the preset point "e" after the machine has stitched up to the design end point "b" and the thread is trimmed. *(NOTE 1).*

(c) Change the frame and restart the machine using the bar switch.

(d) The frame automatically returns to the embroidery start point "a" to start the second embroidery cycle.

(3) Auto free-setting offset (See page 42 for operation instructions.)



a : Embroidery start point
b : Embroidery end point
c : Chosen point in the design

(1) Automatic frame travel
(2) Automatic frame travel performed when operation is restarted.

(a) In the EDIT mode (5th row), preset an offset code at the point(s) "c", where an automatic offset is to be performed during embroidery.

(b) In addition, preset an offset point "e" using the OFFSET function in the 4th row.

(c) As soon as the machine has sewn up to preset point "c", the ATH operates automatically, trimming the threads (*NOTE 2*).

(d) After that, the frame automatically returns to offset point "e".

(e) Perform the necessary task, for example placing applique fabric, at this point.

(f) Restart the machine using the bar switch; the frame automatically returns to the previous point "c" and operation continues.

(g) The frame automatically returns to offset point "e" to start the next embroidery cycle as soon as the design has been completed.

NOTE 1, 2: When setting for the "ATH" (see page 48) is "ON: ATH equipped".

■ Performing a Manual Offset Operation

(1) Stop the machine using the bar switch or the STOP button (stop at the chosen point in the design).

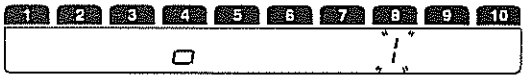
The fixed position mark "▭" must be displayed here. (See page 28)

* The cursor automatically shifts to the MANUAL – FRAME position in the 4th row.

(2) Manually move the frame (toward the operator).

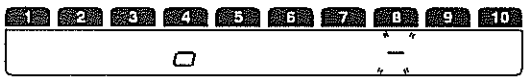
* Carry out the necessary task, for example applique fabric placement.

(3) Input "1" using the number keys (to select manual offset).



* If you pressed "0" by mistake, press "1" to redisplay ⇳. Then. input "1" again.

(4) Press the SET key.



* The frame automatically returns to the previous point.

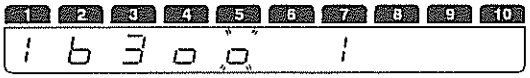
* Start the machine using the bar switch to continue operation.

■ Performing an Auto Offset Operation

(1) Move the cursor to the OFFSET position.

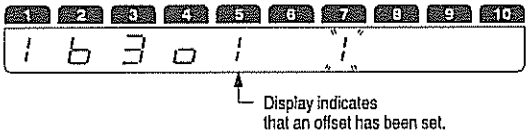
(2) Manually move the frame (to the embroidery start point).

(3) Press the SET key.



(4) Manually move the frame (to the offset point).

(5) Press the SET key.

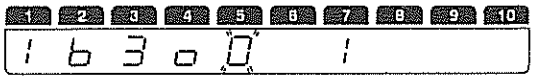


* Start the machine using the bar switch; the frame will return to the embroidery start point to begin sewing. On completion of the design, the frame moves toward the operator.

■ Canceling an Auto Offset

(1) Move the cursor to the OFFSET position.

(2) Input "0" using the number keys (to select cancellation of the offset).

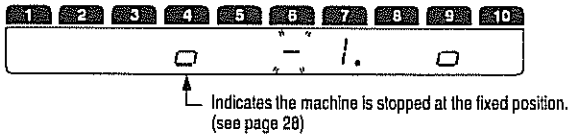


(3) Press the SET key.

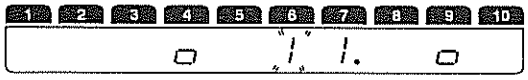
* Note that once an offset has been set it will remain valid until it is canceled. Offsets will be reset when a different design data is set.
* When an offset has been set, frame-back motion by the distance of the offset is not possible.

<Performing Manual ATH Operations>

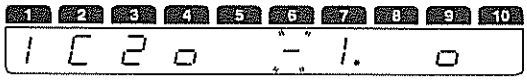
(1) Move the cursor to the MANUAL – ATH position.



(2) Input "1" using the number keys.



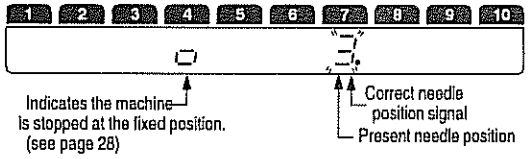
(3) Press the SET key.



* Manual ATH operation is not possible unless the ATH switch in DSW-1 is set to the ON position.
* 1C2 : Stop after a manual ATH operation.

<Performing Manual Color Changes from the 3rd Needle Bar to the 10th Needle Bar>

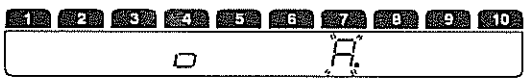
(1) Move the cursor to the MANUAL – COLOR position.



(2) Input "1" using the number keys.

(3) Input "0" using the number keys.

(4) Press the SET key.



* If the needle position sensor is abnormal or if the needle position is changed manually, one of the following symbols is displayed:

  7 : Indicates that the first needle has moved beyond the right limit.

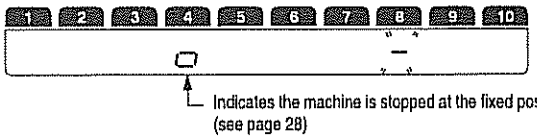
  C : Indicates that the last needle has moved beyond the left limit.

* Needle bar numbers 10 and larger will be displayed as follows.

  10 → A , 11 → b , 12 → C

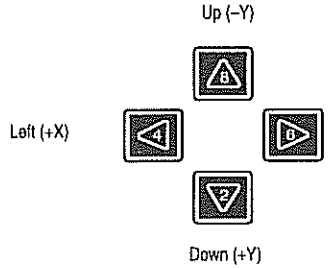
<Moving the Frame Manually>

(1) Move the cursor to the MANUAL – FRAME position.

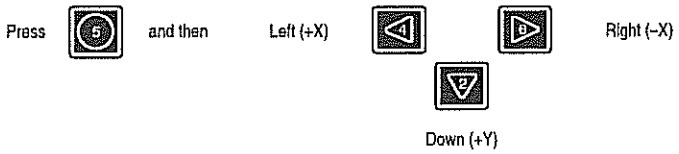


(2) Use the number keys to move the frame (see guidance below).

■ Low speed frame travel

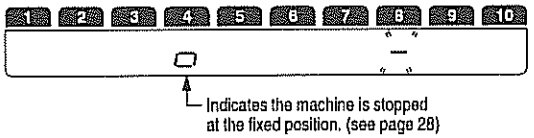


■ High speed frame travel



<Returning to the Origin (Design Start Point)>

(1) Move the cursor to the MANUAL FRAME position.



(2) Input "0" using the number keys.

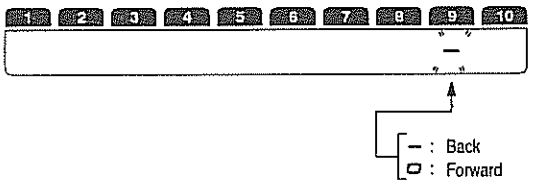
* If "1" is pressed by mistake, the "0" key must then be pressed twice to correct the entry ("–" is displayed the first time the "0" key is pressed).

(3) Press the SET key.

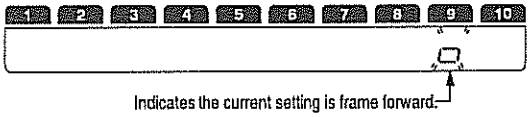
* The start point for repeat operation is that of the first design.

<Selecting Frame – Forward/Back Motion>

(1) Move the cursor to the FORWARD/BACK position.



(2) Press the SEL. key (to select frame-forward or frame-back motion).



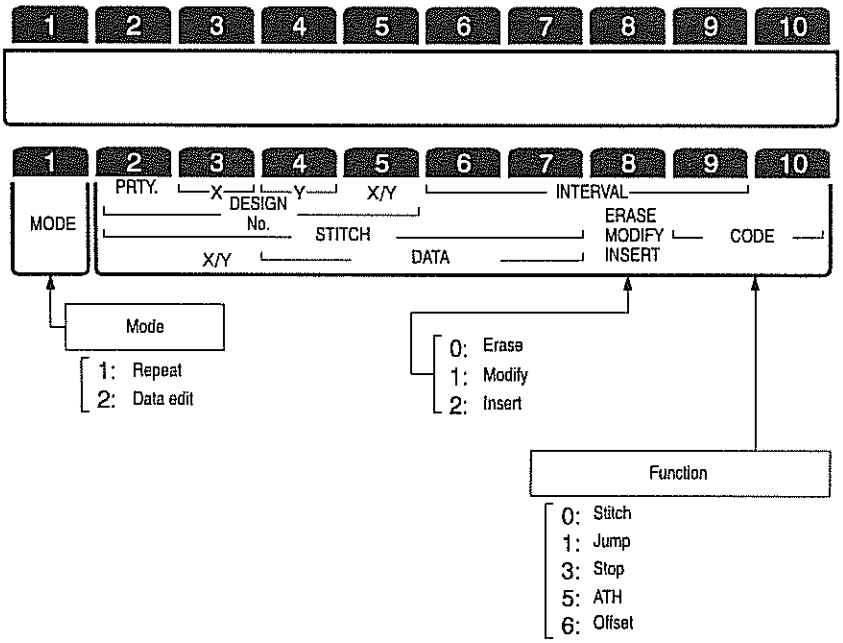
* Pressing the SEL. key alternately selects frame-forward and frame-back motion.

(3) Press the SET key.

5th Row

In the REPEAT mode it is possible to set repetition of a design.

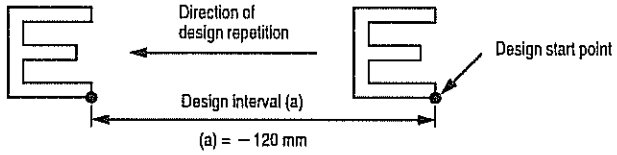
In the DATA EDIT mode, the following can be set; stitch data, function codes (stitch, jump, stop, ATH, offset, and high/low speed.)



Horizontal/vertical repetitions

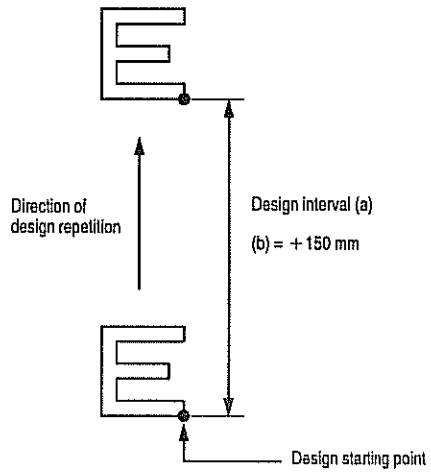
- Enter a (+) value for repetition to the right and a (–) value for repetition to the left.

Example: Number of horizontal repetitions : 2
Horizontal design interval : –120 mm



- Enter a (+) value for repetition towards the top of the frame and a (–) value for repetition towards the bottom of the frame.

Example: Number of vertical repetitions : 2
Vertical design interval : +150 mm

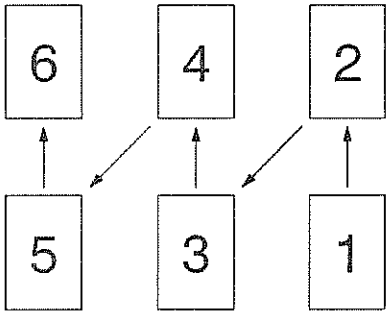


* Note that when a minus sign is entered it is displayed but when a plus sign is entered the display is blank (but a "+" setting has been made).

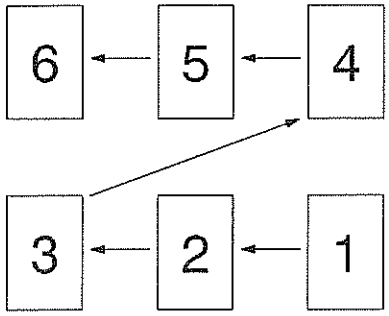
Setting X/Y Priority

Select priority for repetition in either the vertical (Y) or horizontal (X) direction.

(Example of priority on vertical repetition)



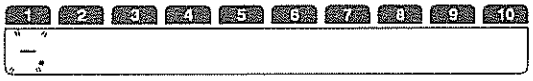
(Example of priority on horizontal repetition)



* In the above example the (–) sign represents the X-direction and the (+) sign the Y-direction.

Example 1: Repeating a design four times horizontally with a 10-mm interval and once vertically with a 30-mm interval, with frame stepping (jump) enabled

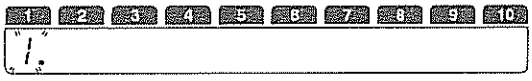
(1) Move the cursor to the MODE position.



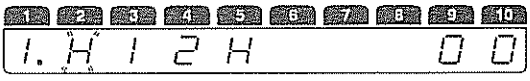
* "1" must be set for the REPT setting in the 2nd row.

* Settings for both auto color change and auto start must be set.

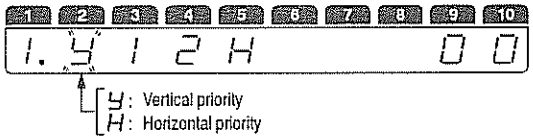
(2) Input "1" using the number keys (to select the REPEAT mode).



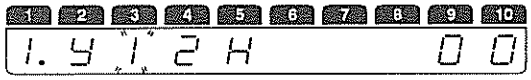
(3) Press the SET key.



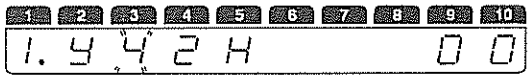
(4) Press the SEL. key (to select vertical priority).



(5) Press the SET key.



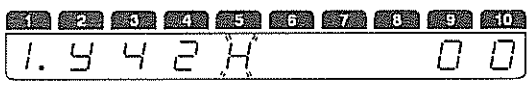
(6) Input "4" using the number keys (to set the number of horizontal repetitions).



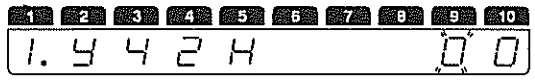
(7) Press the SET key.

(8) Input "2" using the number keys (to set the number of vertical repetitions).

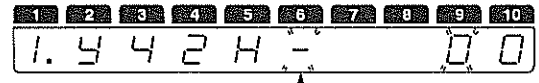
(9) Press the SET key.



(10) Press the SET key.



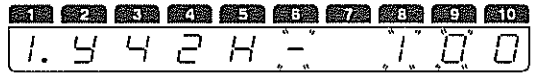
(11) Press the SEL. key (to select the minus (–) symbol for the interval).



Pressing the SEL. key alternately displays and clears the minus symbol:

- : – (minus) direction
No display : + (plus) direction

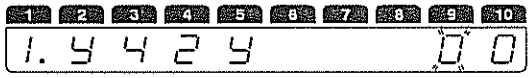
(12) Input "1, 0" using the number keys (to set the horizontal interval).



(13) Press the SET key.

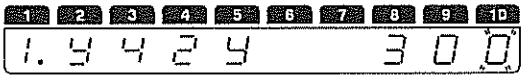
Changes to the vertical interval setting.

(14) Press the SEL. key (to select the plus (+) symbol for the interval).

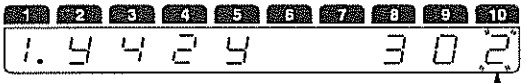


(15) Input "3, 0" using the number keys (to set the vertical interval).

(16) Press the SET key.

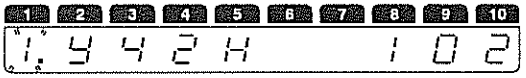


(17) Input "2" using the number keys (to set frame stepping).



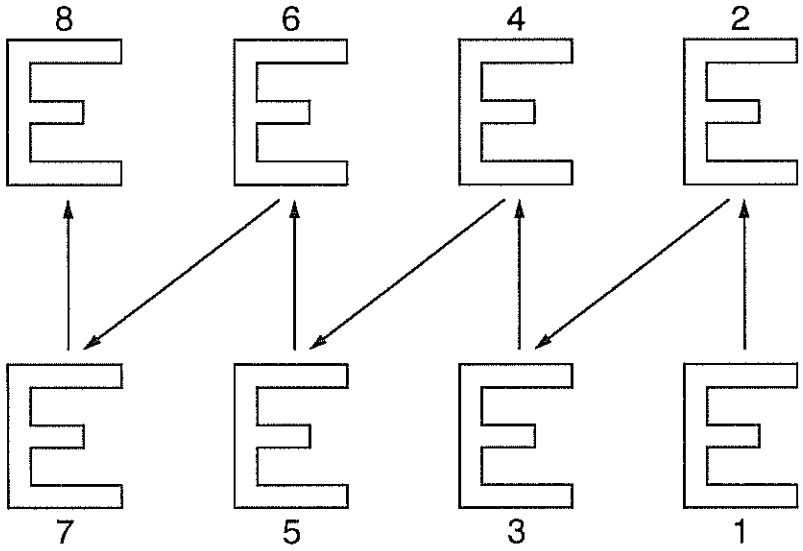
Interval function [0: Stitch, 2: Jump]

(18) Press the SET key.



* Intervals from –999 mm to +999 mm can be set for horizontal and/or vertical repetitions.
* Repeat setting is valid only when tape code (TAPE setting in the 1st row) is set to "5" (memory operation).

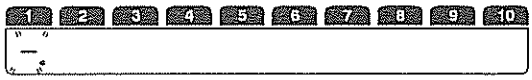
* The settings made above will repeat the design as shown below.



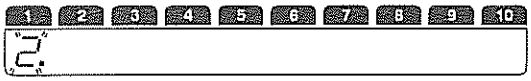
<Using the data editing functions (Erase, Modify, Insert)>

Example 1: Erasing the 100th stitch of registered design number 2

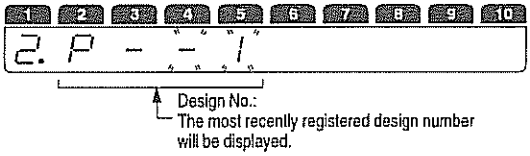
(1) Move the cursor to the MODE position.



(2) Input "2" using the number keys (to select the EDIT mode).

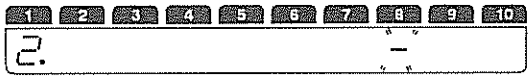


(3) Press the SET key.

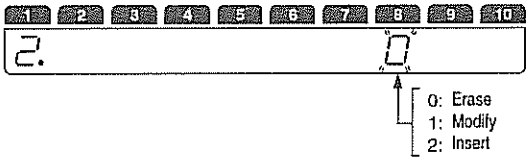


(4) Input "2" using the number keys (to set the design number).

(5) Press the SET key.



(6) Input "0" using the number keys (to select the "erase" function).



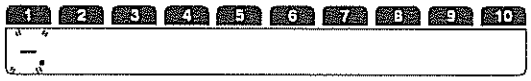
(7) Press the SET key.

(8) Input "1, 0, 0" using the number keys (to set the stitch number).

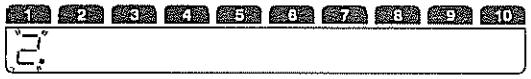
(9) Press the SET key.

Example 2: Modifying the data for stitch number 140 of design number 3 from (X: +0.5 mm; Y: +2.1 mm; Function code: Stitch; Speed code: No setting) to (X: +1.2 mm; Y: –1.3 mm; Function code: Jump; Speed code: Low)

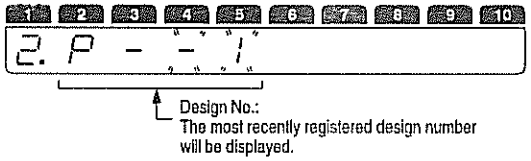
(1) Move the cursor to the MODE position.



(2) Input "2" using the number keys (to select the EDIT mode).

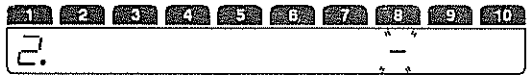


(3) Press the SET key.

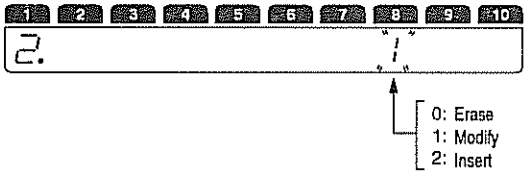


(4) Input "3" using the number keys (to set the design number).

(5) Press the SET key.



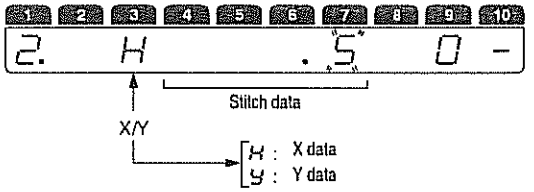
(6) Input "1" using the number keys (to select the "modify" function).



(7) Press the SET key.

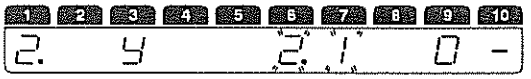
(8) Input "1, 4, 0" using the number keys. (to set the stitch number)

(9) Press the SET key.

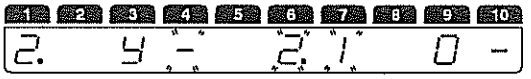


(10) Input "1, 2" using the number keys (to set the X-value).

(11) Press the SET key.

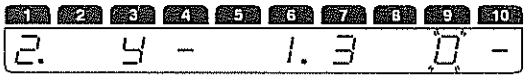


(12) Press the SEL. key (to select the minus (–) symbol).

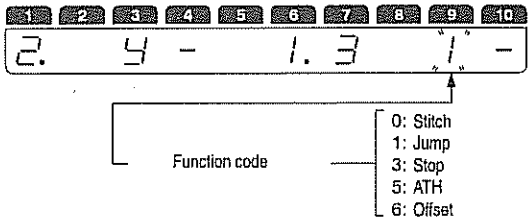


(13) Input "1, 3" using the number keys (to set the Y-value).

(14) Press the SET key.

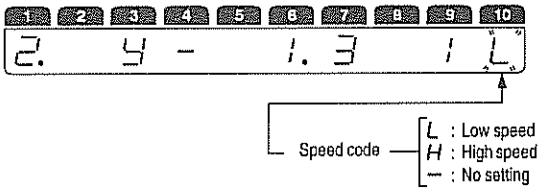


(15) Input "1" using the number keys (to select the "jump" function code).

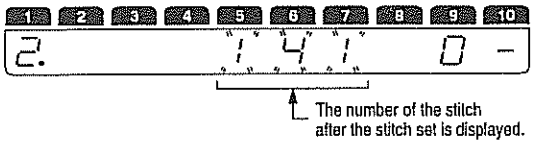


(16) Press the SET key.

(17) Press the SEL. key (to set the low speed code).



(18) Press the SET key.



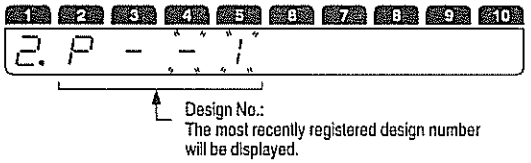
* The setting in step 18 completes the modifications for the 140th stitch. When editing function codes, be sure to complete all the settings including the speed code.

Example 3: Inserting stitch data (X: +2.0 mm; Y: –1.0 mm; Function code: ATH; Speed code: No setting) between stitches 579 and 580 of design number 63

(1) Move the cursor to the MODE position.

(2) Input "2" using the number keys (to select the EDIT mode).

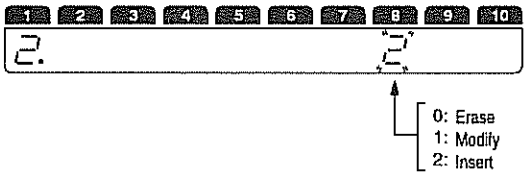
(3) Press the SET key.



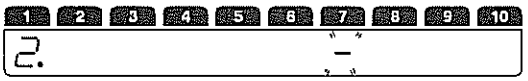
(4) Input "6, 3" using the number keys (to set the design number).

(5) Press the SET key.

(6) Input "2" using the number keys (to select the "insert" function).

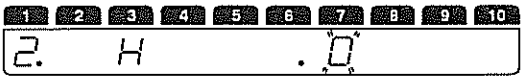


(7) Press the SET key.



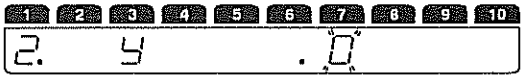
(8) Input "5, 8, 0" using the number keys (to set the stitch number).

(9) Press the SET key.

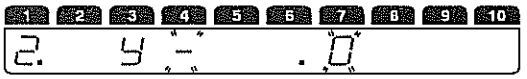


(10) Input "2, 0" using the number keys (to set the X data value).

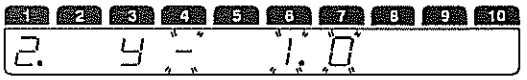
(11) Press the SET key.



(12) Press the SEL. key (to select the minus (–) symbol).

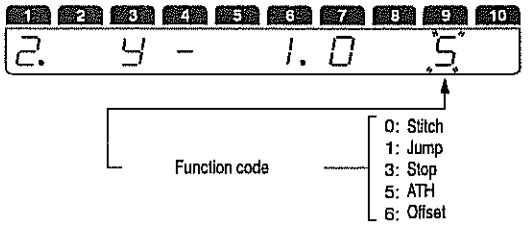


(13) Input "1, 0" using the number keys (to set the Y data value).



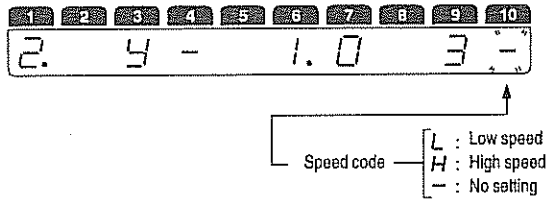
(14) Press the SET key.

(15) Input "5" using the number keys (to select the "ATH" function code).



(16) Press the SET key.

(17) Press the SEL. key (to select "no setting" for the speed code).



(18) Press the SET key.

The stitch referred to as the 581st stitch above is actually the 580th stitch before insertion is performed.

* Step (18) completes insertion.

When editing function codes, be sure to complete all the settings including the speed code.

<Sewing an Applique Design using the Automatic Free-Setting Offset>

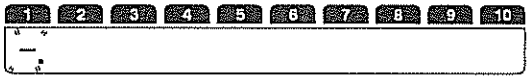
Example 1: An applique design registered as number 3 (whose 123rd stitch is the last stitch in contour stitching and has a stop code in it) is to be embroidered in the following manner:

a) The frame is to be automatically moved to the offset point for applique fabric placement as soon as the contour stitching has been completed, and

b) The frame is also to be returned to its former position to continue applique operation.

1. Edit the stitch data of design number 3 (modify the 123rd stitch's stop code into an offset code)

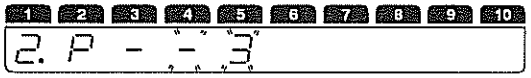
(1) Move the cursor to the MODE position in the 5th row.



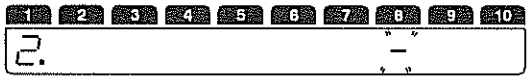
(2) Input "2" using the number keys (to select the EDIT mode).

(3) Press the SET key.

(4) Input "3" using the number keys (to set design number 3).

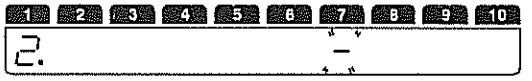


(5) Press the SET key.

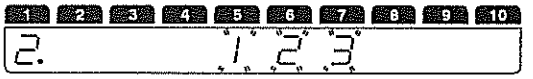


(6) Input "1" using the number keys (to select the "modify" function).

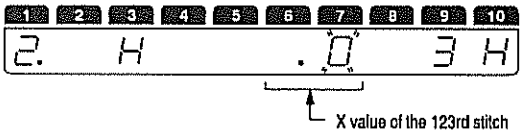
(7) Press the SET key.



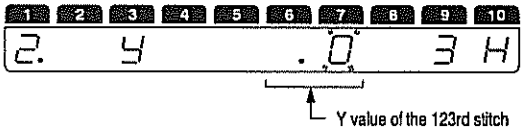
(8) Input "1, 2, 3" using the number keys (to set stitch number 123).



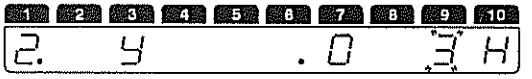
(9) Press the SET key.



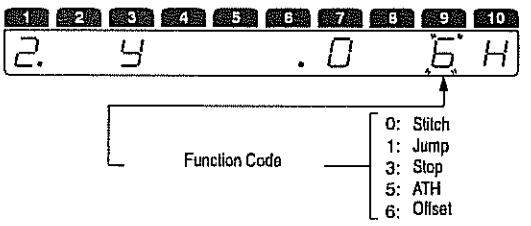
(10) Press the SET key.



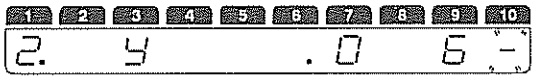
(11) Press the SET key.



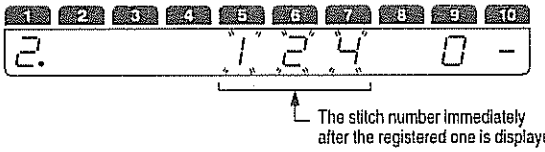
(12) Input "6" using the number keys (to select the "offset" function code).



(13) Press the SET key.



(14) Press the SET key.



* When setting the free-setting offset function two times or more, repeat the procedure from step (8) through (14).

2. Prepare design number 3 for a DATA SET operation in the 1st row.
3. Set the Auto Offset (see page 31.)

After completing the above settings, start the machine using the bar switch.

(a) The frame automatically travels to the embroidery start point to sew the design.

(b) As soon as the contour stitching is finished, the machine stops automatically and the ATH trims the threads. (*NOTE 1*)

(c) After that, the frame returns to the offset point.

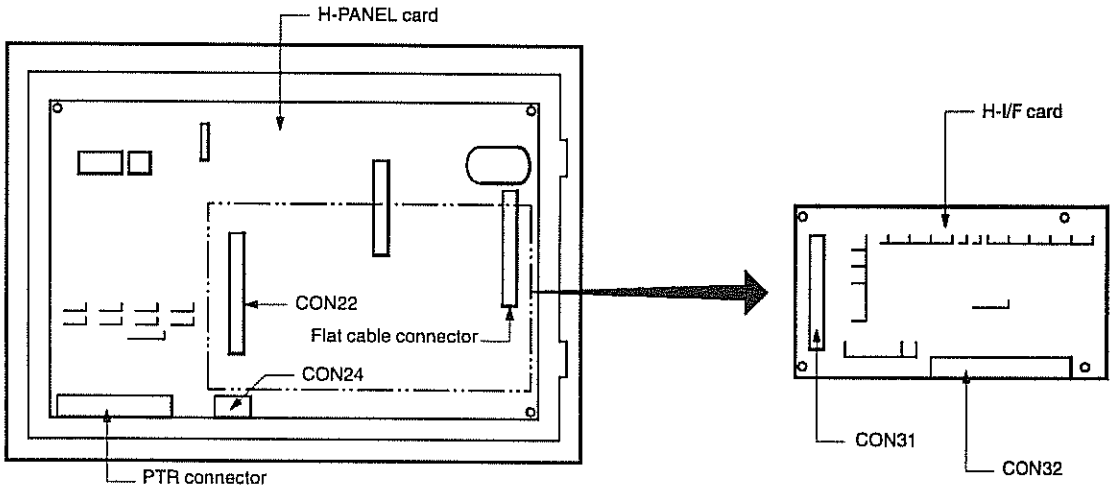
(d) Apply the applique fabric at this point.

(e) Restart the machine using the bar switch; the frame automatically returns to the end of the contour stitching to continue the applique operation.

NOTE 1: When setting for the "ATH" (see page 48) is "ON: ATH equipped".

12. GENERAL DESCRIPTION OF THE CONTROLLER BOX

■ PANEL Card (installed in the box)



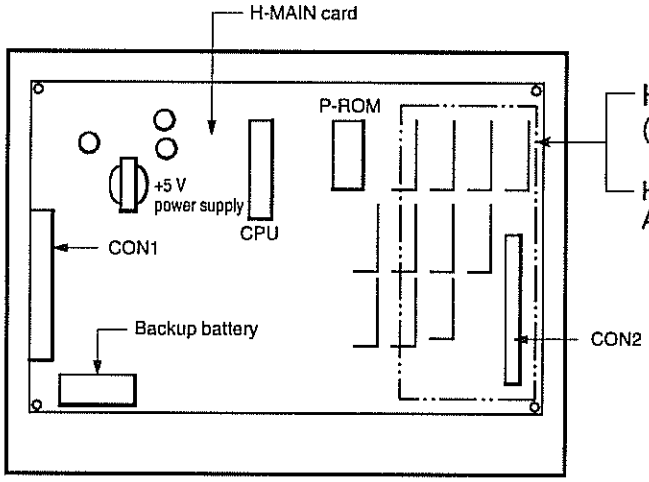
Connector	Connected to
CON22	H-I/F card
CON24	H-JOINT 2 card
PTR connector	PTR
Flat cable connector	H-MAIN card

Used for panel display, switch signal inputs, PTR connection, and signal transfer for the whole embroidery machine.

Connector	Connected to
CON31	H-PANEL card
CON32	H-JOINT 2 card

Used to interface the controller box with the H-JOINT 2 card. All signals of the embroidery machine excluding a PTR are handled by this card.

■ MAIN Card (installed to the door)



H-ROM1 card
(No data can be written to this card.)
or
H-ROM2 card (optional)
Approximately 80,000 stitches

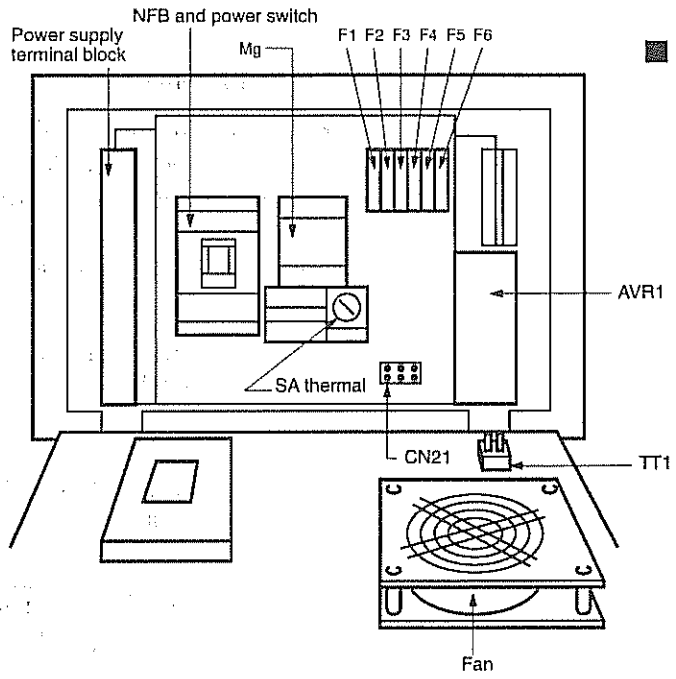
NOTE: One of the H-ROM 1, and H-ROM 2 cards can be connected to the CON2 connector.

Connector	Connected to
CON1	H-PANEL card
CON2	For installing the H-ROM1 or H-ROM2 cards

Used to handle the control signals for the embroidery machine and to store data of about 128,000 stitches.

13. GENERAL DESCRIPTION OF THE POWER SUPPLY BOX

Front View

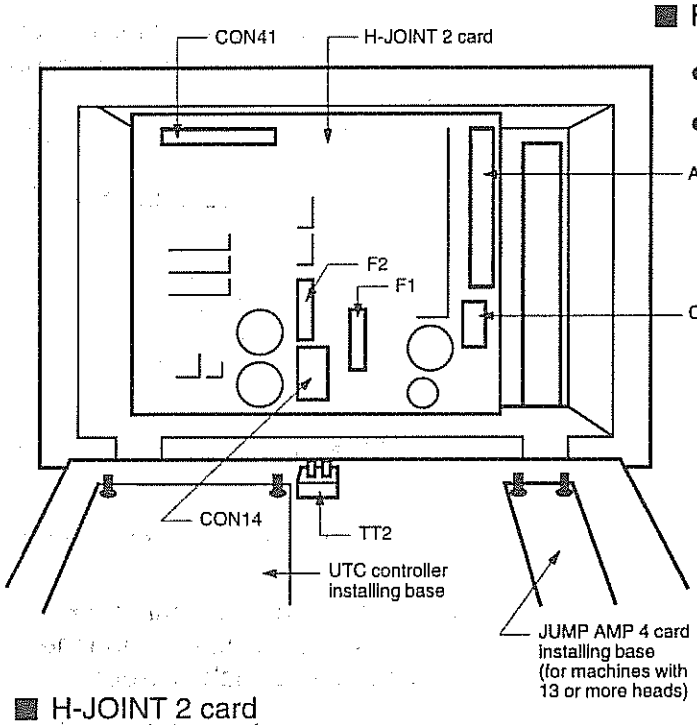


Fuses F1 to F6

- F1 (1A) : For the main shaft motor Mg
- F2 (10A) : Jump power supply
- F3 (10A) : Jump power supply
- F4 (2A) : For the color change motor
- F5 (10A) : For ATH power supply
- F6 (10A) : For the fan, 12 V power supply, TT1, and TT2

Connector	Connected to
CN201	Main shaft motor
TT1	Reader/handler unit, etc.

Rear View



Fuses F1 and F2

- F1 (8A) : For the controller and PTR
- F2 (8A) : For the controller and PTR

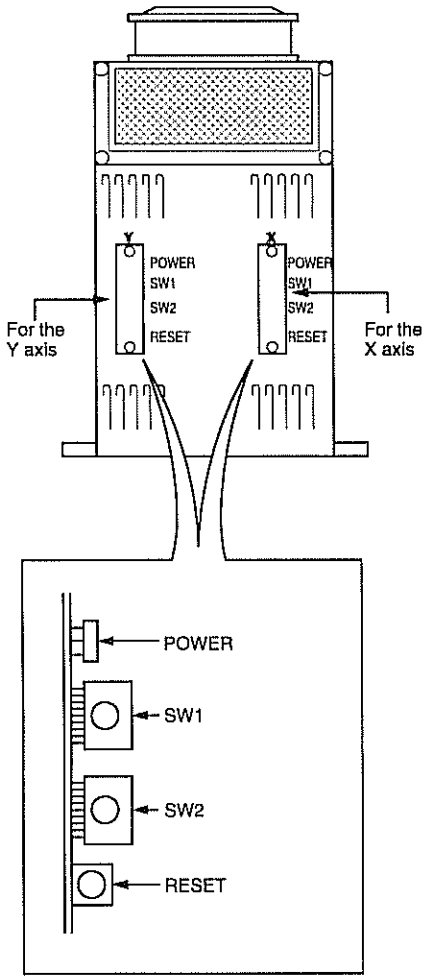
Connector	Connected to
CON14	H-PANEL card
CON19	Inside the power supply box
CON41	H-I/F card
ATH terminal block	ATH solenoid in each head
TT2	Reader/handler unit, etc.

H-JOINT 2 card

Used to control signal I/O operations between the H-I/F card and individual sections of the embroidery machine. This card also has a jump amp, color change brake pack, thread trimming control circuit, and +24 VDC power supply.

14. OUTLINE OF THE DRIVER BOX

Front



POWER lamp

This lamp indicates the status of the driver:

Lit green : The driver is in a normal condition.
Flashing green : The pulse motor is not excited.
Flashing red : The driver is in an abnormal state such as:

(1) An overcurrent flows to the pulse motor.

(2) An extremely high heat builds up inside the driver box.

SW1

This switch allows a design to be enlarged; in addition, scaling either X-direction and/or Y-direction is also possible.

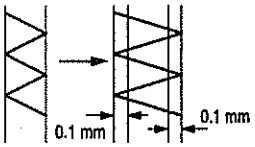
Setting	0	1	2	3	4	5 to F
Enlargement ratio	100%	102%	103%	104%	105%	106%

SW2

This switch designates pull compensation values for satin stitches. Setting in the X-direction and the Y-direction can be made individually.

Setting	0	1	2	3 to F
Pull compensation	No	0.1 mm	0.2 mm	0.3 mm

(Example)
When "2" has been designated.



RESET switch

This switch is used to reset the alarm or to turn ON/OFF the pulse motor excitation.

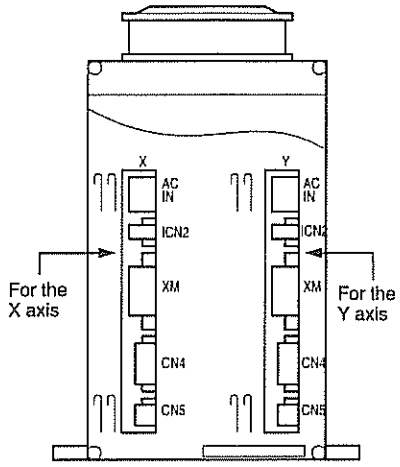
The setting function varies according to the lamp status as follows:

Lit green : Pressing the switch will turn OFF the pulse motor excitation, and the lamp changes to flash in green.

Flashing green : Pressing the switch will turn ON the pulse motor excitation, and the lamp changes to light in green.

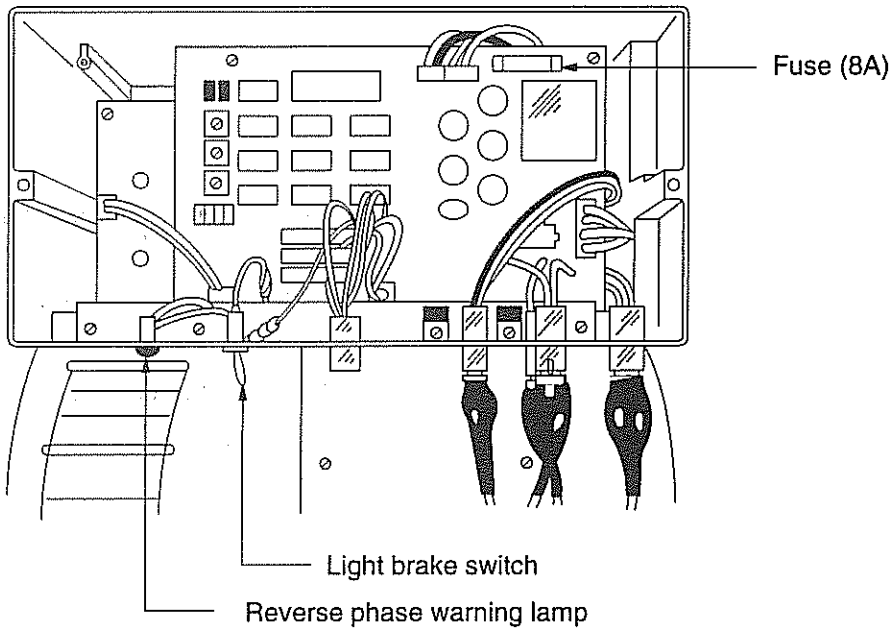
Flashing red : Pressing the switch will reset the alarm.

■ Rear side



Connector	Destination
ACIN	100 VAC of power supply box (both X- and Y-axes)
CN2	Either X-axis or Y-axis is connected to the fan in pulse motor driver.
XM	X-axis pulse motor driver
YM	Y-axis pulse motor driver
CN4	H-Joint 2 card (both X- and Y-axes)
CN5	Not used. (both X- and Y-axes)

15. GENERAL DESCRIPTION OF THE MAIN SHAFT MOTOR CONTROLLER BOX



- Light brake switch

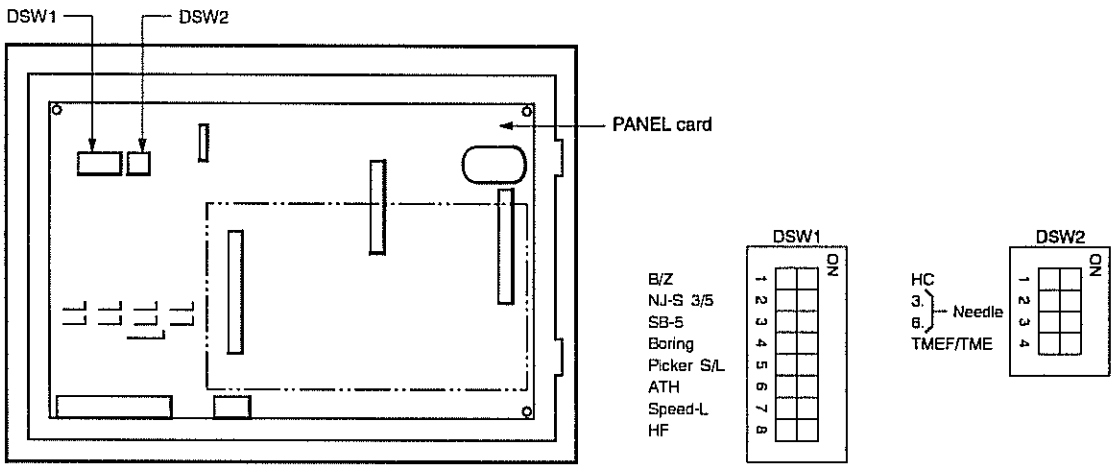
  ON : To apply lightly the break while the machine is stopping/stopped.

  OFF: Not to apply lightly the break while the machine is stopping/stopped.

- Reverse phase warning lamp

  This lamp warns that a reverse-phased power is supplied to the main shaft motor.

16. DESCRIPTION OF THE DIP SWITCHES DSW1 AND DSW2



Controller box body side

■ DSW1

- B/Z (Binary tape type Barudan/ZSK setting)

  ON : ZSK OFF: Barudan

- NJ-S 3/5 (Thread trimming and frame stepping)

  ON : Frame stepping is performed after thread trimming when jump data continues for 5 stitches or more.

  OFF: Frame stepping is performed after thread trimming when jump data continues for 3 stitches or more.

- SB-5 (All-head sewing start position after frame back operation)

  ON : At the 5th stitch before a thread break is detected

  OFF: Position where a thread break is detected

- Boring (Boring function)

  ON : Boring function is used.

  OFF: Boring function is not used.

- Picker S/L (Thread trimming length)

  ON : Long OFF: Short

- ATH (Automatic thread trimming)

  ON : ATH is used. OFF: ATH is not used.

- Speed-L

  ON : High speed is up to 600 rpm, low speed is up to 450 rpm.

  OFF: High speed is up to 800 rpm, low speed is up to 600 rpm.

- HF (Frame)

  ON : Cap frame OFF: Standard frame

  * When set in the ON position, the high speed is up to 600 rpm and the low speed is up to 400 rpm.

■ DSW2

- HC (Cylinder type or non-cylinder type)

  ON : TME-HC, TMEF-HC

  OFF: TME-H, TMEF-H

- Needle (Number of needles) (*NOTE 1*)

DSW2-2	DSW2-3	Number of Needles
OFF	OFF	1
ON	OFF	3
OFF	ON	6
ON	ON	9

- TMEF/TME (Machine type)

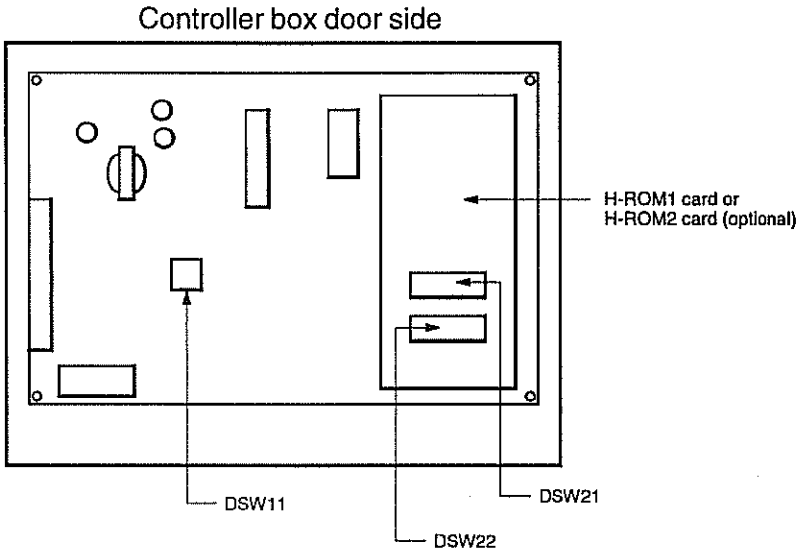
  ON : TME-H, TME-HC

  OFF: TMEF-H, TMEF-HC

  * The 4-needle machines use a special P-ROM.

NOTE 1: Setting for the number of needles made with DSW21 has priority over DSW2. Set No. 2 switch of DSW21 (see page 51) to OFF except for 12 needles.

17. DESCRIPTION OF DIP SWITCHES DSW11, DSW21, AND DSW22



DSW11

- A-ORG (Automatic origin return)

  ON : Performed

  OFF: Not performed

- R-Stch (Return stitch)

  ON : Performed

  OFF: Not performed

  * When ATH setting with DSW1 (see page 48) is OFF, return stitching will not be performed even though this setting is made to ON.

- TD1/TD2 (selecting the upper thread breakage detection method)

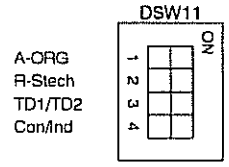
  ON : The machine will stop when two consecutive thread breaks are detected.

  OFF: The machine will stop when one thread breakage is detected.

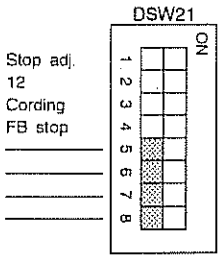
- Con/Ind (Unified type/individual type tension base for TME-HC)

  ON : Individual tension base

  OFF: Unified type tension base



DSW21



- Stop adj. (Stop start timing at setting (see page 52) / at setting end)

  ON : At setting

  OFF: At setting end

- 12 (Setting for 12-needle machine)

  ON : 12-needle machine

  OFF: Other than 12-needle machine

  * This setting has priority over DSW2 settings (see page 48).

- Cording (Cording device)

  ON : Cording device "equipped"

  OFF: Cording device "not equipped"

- FB stop (Stop / no stop at the all-head sewing start point (*NOTE 1*))

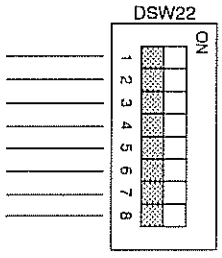
  ON : Stop

  OFF: No stop

  NOTE: The all-head sewing start point set with DSW-1 "SB-5" (see page 48) is effective.

  * Switch numbers 5 to 8 are not used. (set them to OFF)

DSW22



* DSW22 is not used. (set all switches to OFF)

18. SETTING THE STOP START TIMING (MAIN SHAFT ANGLE)

This setting is required when the main shaft does not stop at the fixed position.

- When the main shaft stops before the fixed position: Set the stop start timing to a later point. (larger main shaft angle)
- When the main shaft stops behind the fixed position: Set the stop start timing to an earlier point. (smaller main shaft angle)

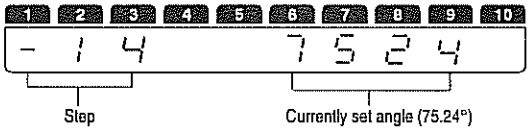
■ Procedure

(1) Turn the power switch ON.

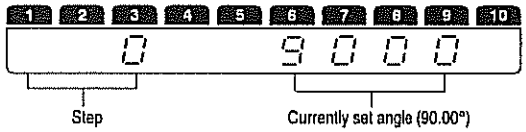
* The following operations must be conducted when the machine is stopping.

(2) Set No. 1 switch (Stop adj.) of DSW21 on H-ROM1 or H-ROM2 card to ON.

[Example of TMEF-H and TMEF-HC]

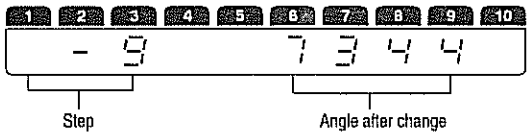


[Example of TME-H and TME-HC]

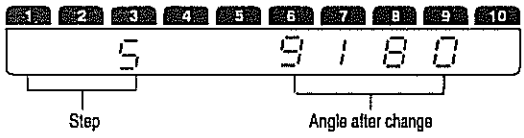


(3) Press the △ or ▽ key to change the step (main shaft angle setting).

[Example of TMEF-H and TMEF-HC]



[Example of TME-H and TME-HC]



* Pressing △ once increases the step and changes the main shaft angle by +0.36°.

Pressing ▽ once decreases the step and changes the main shaft angle by –0.36°.

* Setting ranges

TMEF-H, TMEF-HC: 68.40° to 92.16° (standard setting : 75.24°)

TME-H, TME-HC : 78.12° to 101.88° (standard setting : 90.00°)

(4) Set No. 1 switch of DSW21 to OFF.

Setting is completed.

19. STOP FACTORS AND ACTIONS TO TAKE

Code No.	Stop Factor	Action to Take
211	Fixed position signal error	Stop position error Check the encoder signal, H-JOINT 2 card, or H-I/F card.
221	+X frame limit signal detected.	Correct the design start point (move the frame so that the design fits in the embroidery area).
222	–X frame limit signal detected.	
223	+Y frame limit signal detected.	
224	–Y frame limit signal detected.	
225	Cap frame travel (outside the set) embroidery area (X axis).	
281	Color change time exceeds 15 seconds.	Adjust the needle position and 1-rotation sensor.
291	Thread breakage detected.	Perform threading and other repairs.
2b1	Read error No change is made 5 seconds after a sprocket signal.	PTR or TFD is not connected. Tape is damaged. Connect the equipment or mend the tape.
2b2	Read error, Tajima complement error	Mend the tape.
2b3	Read error, There is data in the end code.	
2b4	Read error, Function code error	
2b6	PTR tape signal error	PTR: Set the tape and put down the tape lever. TFD: Set it to communication mode (start, set).
2b7	Data set is not completed.	Perform data setting completely.
2b8	Data advance read buffer error	Check setting of the PTR and/or TFD.
2b9	Memory write error	Check the H-MAIN card.
2bb	Frame back range exceeded	Cancel the frame back operation.
2bc	Design number error	Change the set design number.
2c1	The machine is started or the frame back/forward operation is executed during setting on the panel.	Do not attempt to operate the machine while performing setting on the panel.
2cd	Power supply is turned OFF during design deletion or edit mode processing.	Rewrite data to the memory.
312	Encoder fixed position signal error	Check the encoder or encoder signal line.

Code No.	Stop Factor	Action to Take
314	Main shaft rotation failure	Check the encoder or encoder signal line. Check the motor and motor belt. Change the power supply phase order.
321	Pulse motor driver failure	Check the drive assembly of the axis for which an alarm is given (flashing in red).
324	Frame feed output when the needle penetrates the fabric	Decrease the machine operating speed. Check the encoder or encoder signal line.
325	Cap frame machine origin search error	Check the cap frame machine origin sensor and cap frame machine origin harness.
382	Needle position movement per 1 section takes more than 1 second.	Change the color change motor or needle position sensor.
383	No needle position signal is given while the main shaft is running.	Check the needle position sensor.
384	No 1-turn signal is given while the main shaft is running.	Check the 1-rotation sensor.
3A2	Thread trimming output time exceeded	Check the H-JOINT 2 card.
3d3	NMI signal error	Check the H-MAIN card, H-JOINT 2 card, or controller power supply harness.

NOTE: When an error code classified under 300 is generated, please consult your Tajima distributor for appropriate remedy.

■ TROUBLESHOOTING (1)

Problem	Cause	Corrective Action
Machine doesn't start	a: Loose or broken belts	Tighten or replace the belt.
	b: Fuse for power supply or circuits is blown.	Check amperage and replace the fuse.
	c: Needle position or 1-rotation signal is not detected.	Adjust the needle position with the T-box so that the normal needle position signal LED in the manual color change cursor position is lit.
	d: Frame limit switch is activated.	Move the frame to the appropriate position.
	e: Alarm lamp on the drive unit is flashing in red.	Press the RESET switch on the drive unit.
	f: Incomplete connection of power supply box connectors.	Securely connect the connectors.
	g: Incomplete connection of main shaft motor control box connectors.	Securely connect the connectors.
	h: Cap frame machine origin search failed.	The cap frame origin sensor may be faulty, disconnected, or clogged. Set the dip switch "HF" to OFF and back to ON, and perform data setting.
Stop position error	a: Loose belt	Tighten the belt.
	b: Encoder position is incorrect or encoder is faulty.	Adjust the encoder position or replace the encoder.
Incorrect color changing	a: Stop position is incorrect.	Also see the "Stop position error" section above. Manually set the main shaft in the stop position.
	b: Needle position/1-turn signal is not detected.	Adjust the needle position with the T-box so that the normal needle position signal LED in the manual color change cursor position is lit.
	c: Needle bar position is wrong.	Adjust it in the correct position.
	d: Take-up lever position is wrong.	Adjust the take-up lever so that it coincides with others in the stop position.
	e: Fuse for color change motor is blown.	Replace fuse F4 installed to the front section of the power supply box.

Problem	Cause	Corrective Action
Upper thread detection failure	a: Thread holding spring makes incomplete contact.	Clean and adjust the thread holding spring.
	b: Tension base connector makes incomplete contact. Tension base card is faulty.	Securely connect the connectors.
	c: Upper thread breakage timing contact makes incomplete contact.	Clean the upper thread breakage timing contact.

Jump failures	a: Incomplete connection of connectors.	Securely connect the connectors.
	b: Fuses for the jump circuit is faulty.	Replace fuses F2 and F3 installed to the front section of the power supply box.
	c: Jump solenoid is faulty.	Replace the solenoid.
	d: Tension base switch or card is faulty.	Replace the tension base switch or card.

■ TROUBLESHOOTING (2)

Problem	Cause	Corrective Action
Reading errors	a: Tape is faulty:	
	* Both the positive and negative values of the same number exist in 1-stitch data.	Correct the tape.
	* Stitch codes are not provided at every 3rd character.	Correct the tape.
	* Feed hole intervals are irregular.	Correct the tape.
	* Feed hole has burr or is clogged.	Correct the tape.
	* Tape has no end code.	Add and correct the tape.
	b: Reader fails to read.	Clean or replace.
	c: Reader capstan roller is worn.	Replace.
	d: Reader is faulty.	Repair or replace.
	e: Connectors make incomplete contact.	Securely connect the connectors.

Problem	Cause	Corrective Action
Design displaced	a: Tape is faulty.	Correct the tape.
	b: Excessive tensioning of frame drive belt	Loosen the belt.
	c: Foreign matter sticks on the frame drive rail.	Clean.
	d: Drive card is defective.	Replace.
	e: Overall frame weight is excessive.	Decrease the main shaft speed. Set the dip switch "Speed-L" to ON.

20. MAINTENANCE AND OTHER PRECAUTIONS

(1) Lubricating Points

1. Needle bar cases	Once a week
2. Gears of thread take-up levers	Once a week
3. Rotary hooks	Every 3 or 4 hours
4. Arms	Twice a week
5. Rotary hook bases	Twice a week

(2) Cleaning Points

1. Tape reader (Use the accessory air-brush.)	Keep metal objects away from the reader head!	Every day, before use
2. Filters of power supply box, driver box		Once a week
3. Grooves in the front rails		Every day
4. Slide rails of the needle bar cases		Once a week
5. Rotary hooks		Every time when lubricating
6. Take-up springs		Every day
7. Main shaft motor filters		Once a week

(3) Other Precautions

- The X and Y drivers and main shaft motor drive belt

  An excessively tight or loose belt can cause malfunctions. Check the belt tension by hand at least once every 3 to 6 months.

  Do not neglect to check drive components for excessive wear.

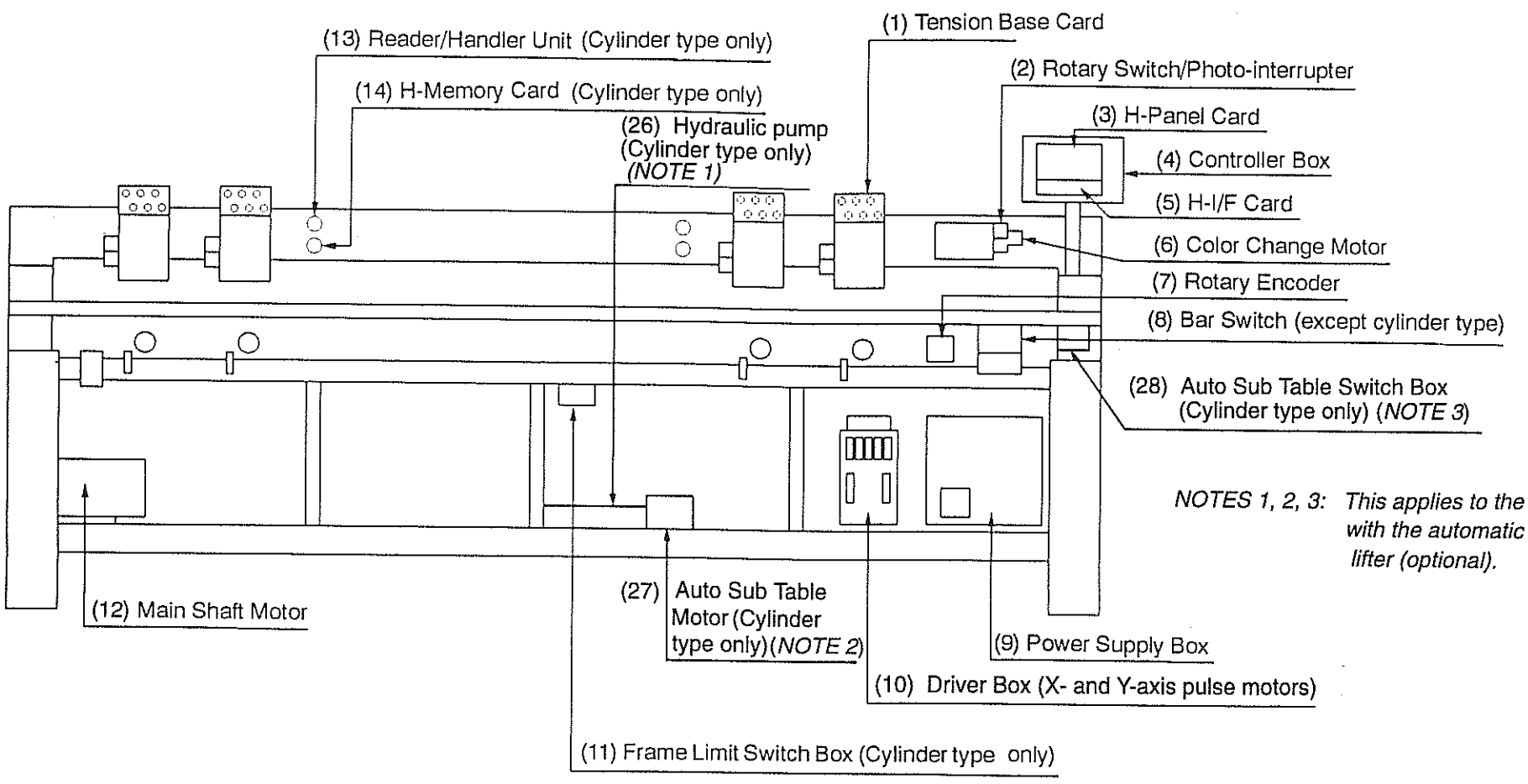
- H-MAIN card has a back-up battery to maintain data storage. However, it may lose its charge if the main power is left off for more than one month, resulting in loss of stored data.

- For the TME-HC and TMEF-HC machines, when the specification is switched to the cap frame specification or the set up is completed, set the dip switch DSW1 "HF" to OFF and back to ON, and perform data setting.

LAYOUT OF THE MAJOR CARDS FOR THE H-SERIES

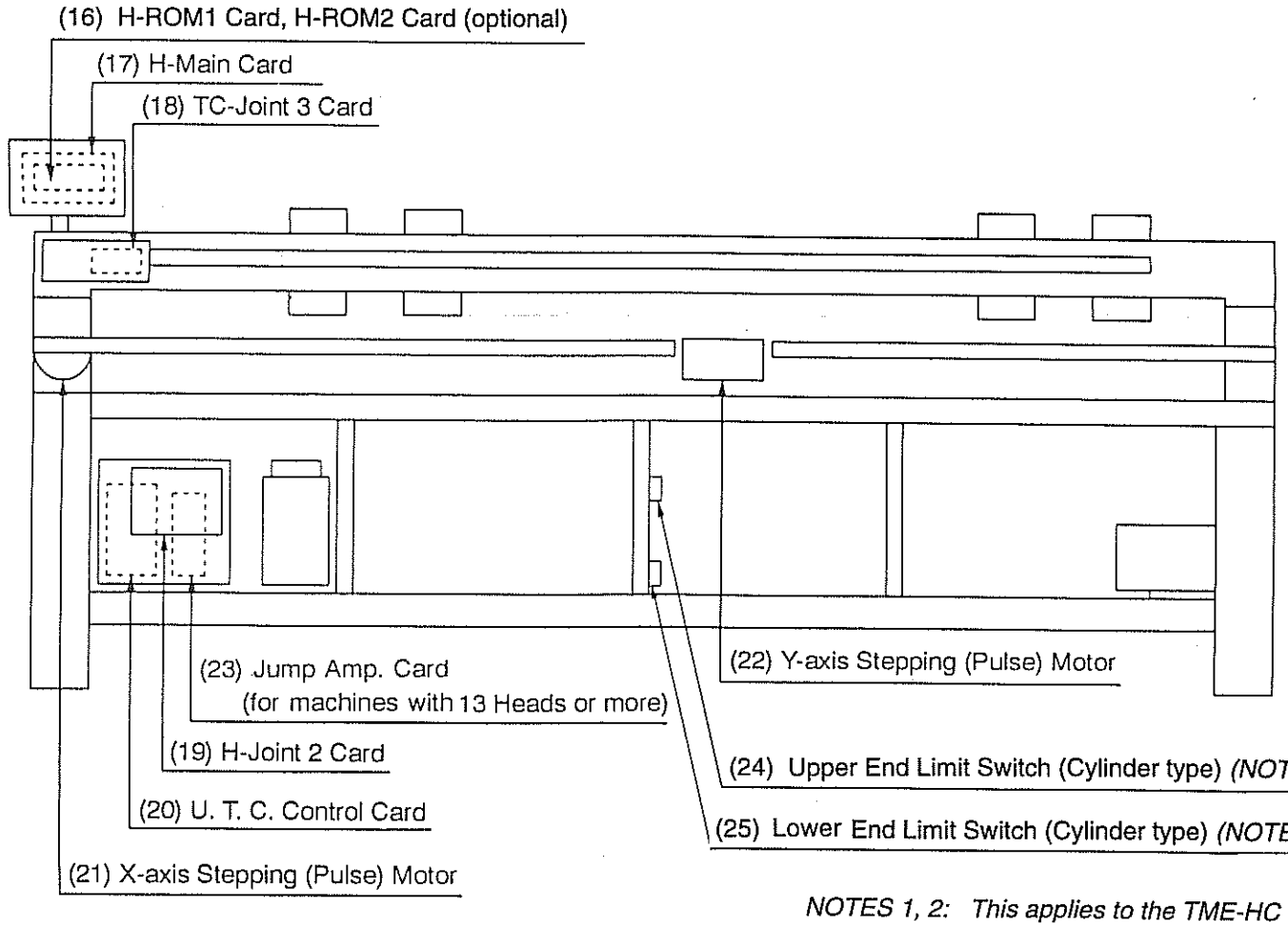
TMEF-H (Type II, III)
TMEF-HC (Type I, II)
TME-H (Type II)
TME-HC (Type II)

[Front Side]



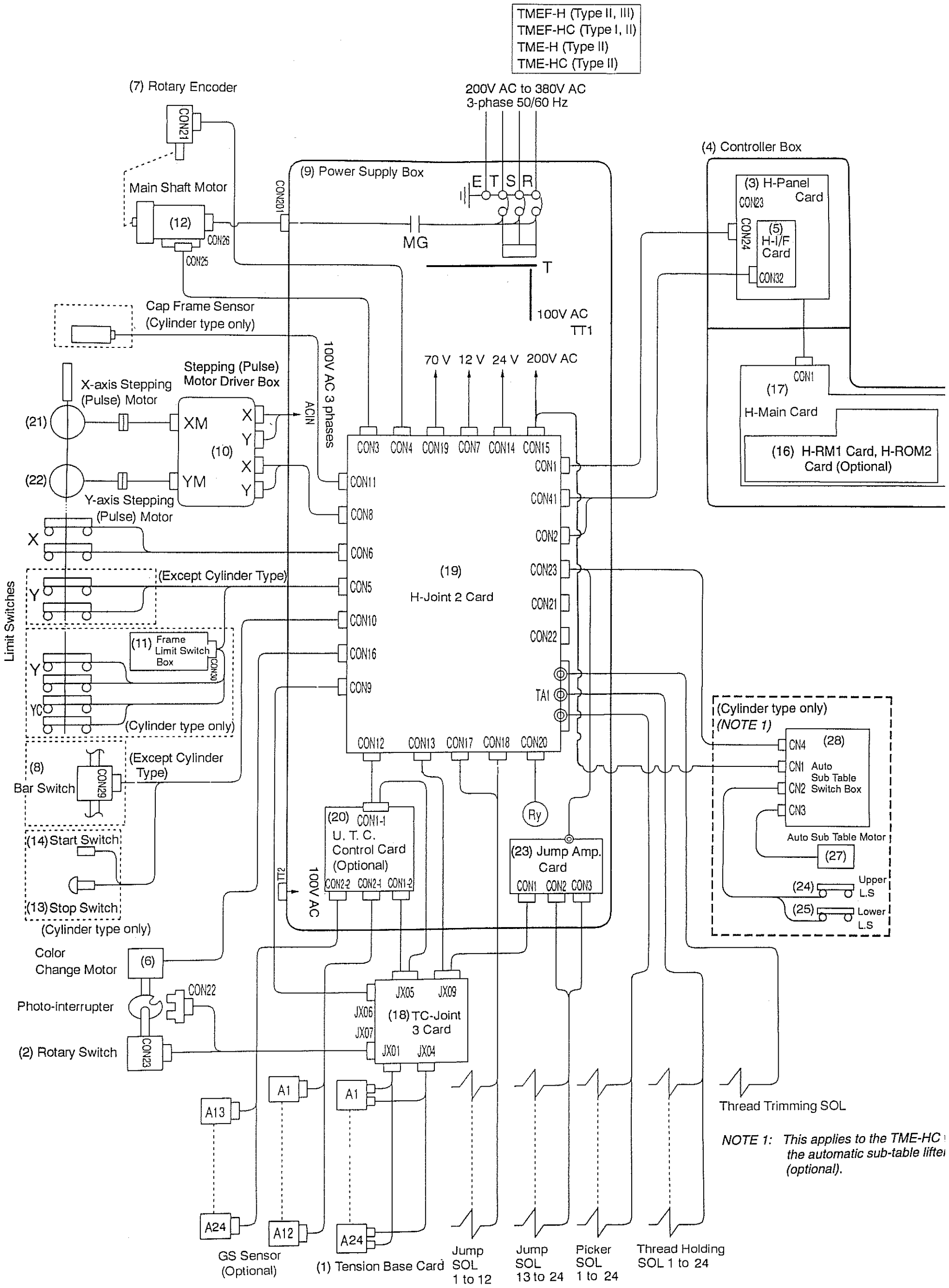
NOTES 1, 2, 3: This applies to the TME-HC with the automatic sub-table lifter (optional).

[Rear View]



NOTES 1, 2: This applies to the TME-HC with the automatic sub-table lifter (optional).

ELECTRICAL SYSTEM DIAGRAM FOR THE H-SERIES MACHINES



NOTE 1: This applies to the TME-HC the automatic sub-table lifte (optional).