TOSHIBA

TOSHIBA Bar Code Printer

B-SX6T/SX8T-TS12-QM-R/TS12-CN

Key Operation Specification

First Edition: March 10, 2006
2nd Edition: July 18, 2008
3rd Edition: March 30, 2009
4th Edition: December 6, 2013
5th Edition: June 20, 2014

TOSHIBA TEC CORPORATION

TABLE OF CONTENTS

Page

1. SCOPE

This specification describes key operations of the B-SX6T-TS12-QM-R or B-SX6T-TS12-CN (hereinafter referred to as “B-SX6T”) and B-SX8T-TS12-QM-R or B-SX8T-TS12-CN (hereinafter referred to as “B-SX8T”) general-purpose bar code printers using their keys and the LCD display.

NOTE: Firmware version
Due to the addition of SuperMPS function, the firmware versions of the B-SX6T and B-SX8T change as follows:

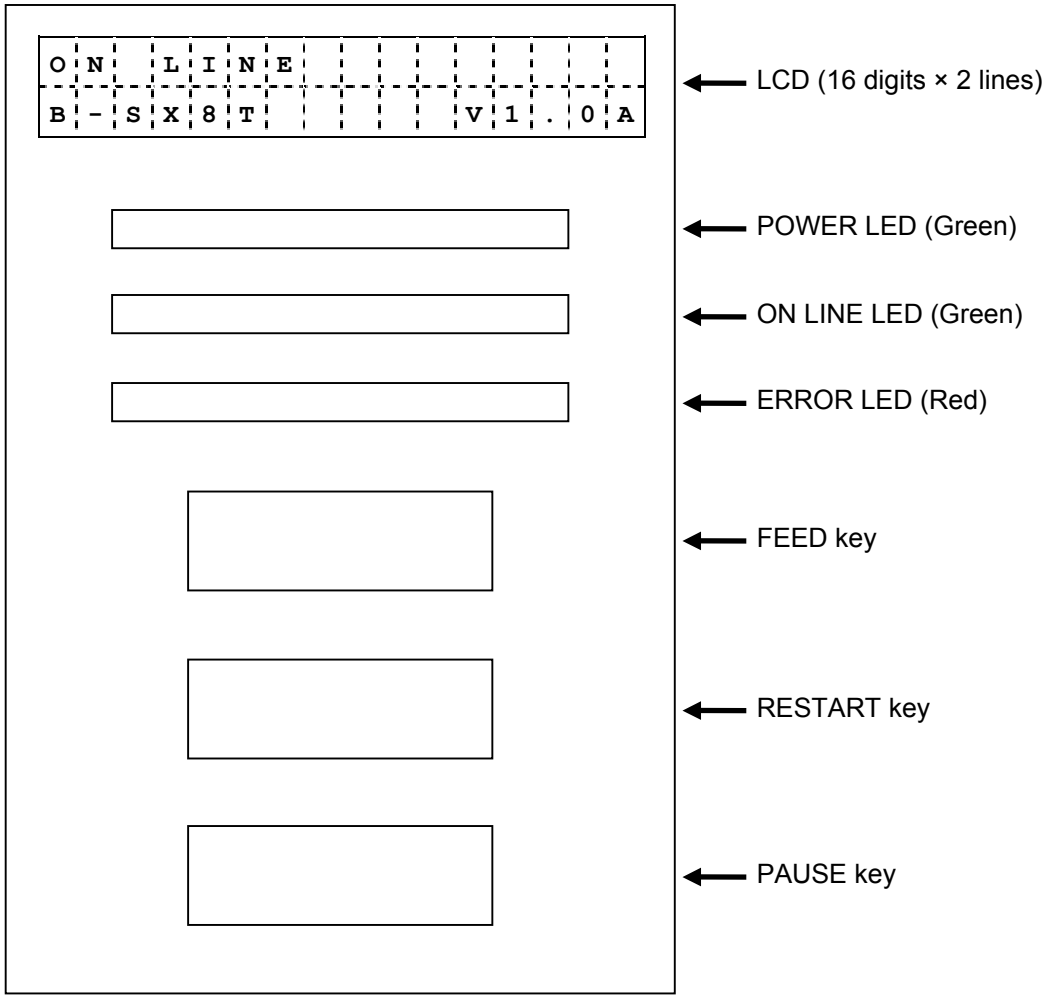
Model	SuperMPS function	Version
B-SX6T	Not supported	Version V: V1.5 or before
	Supported	Version V: V1.6 or later
B-SX8T	Not supported	Version V: V1.5 or before
	Supported	Version C: C1.6 or later

2. OUTLINE

The key operations are performed roughly in two modes: online mode and system mode. In online mode, where the printer is connected to a host device such as a personal computer, the key operations are performed mainly to pause or restart the printer and to display printer status messages and error messages on the LCD. In system mode, the key operations are performed mainly to conduct a self-test and to make various parameter settings. This specification describes the key operations in these two modes and in download mode.

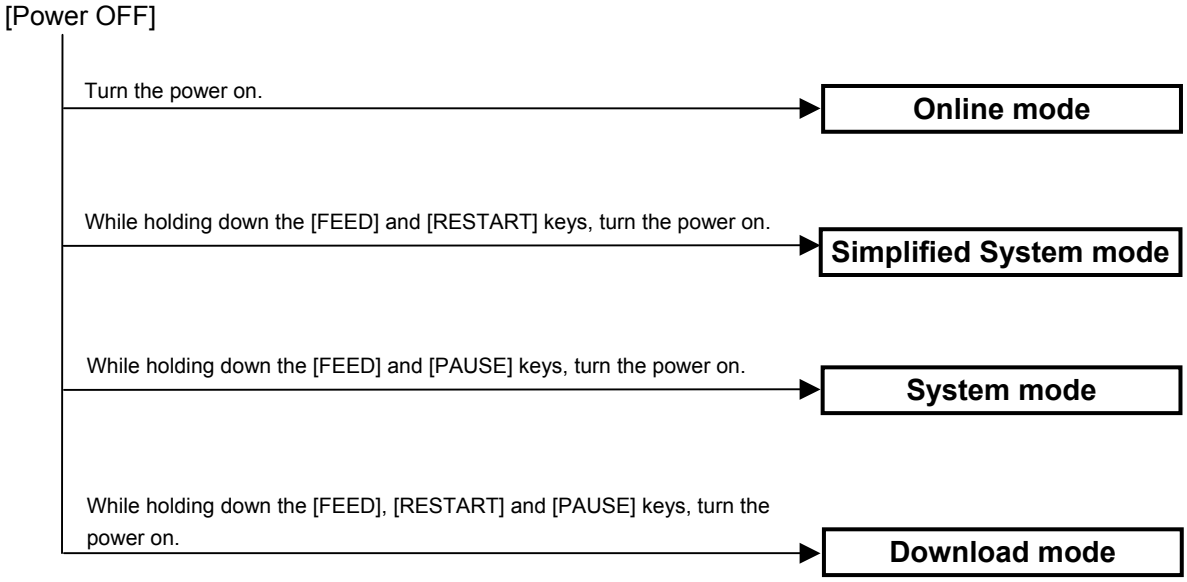
For explanation purposes, this specification uses English key names and LCD messages of the B-SX8T, although other languages are available for key names and LCD messages.

3. OPERATION PANEL

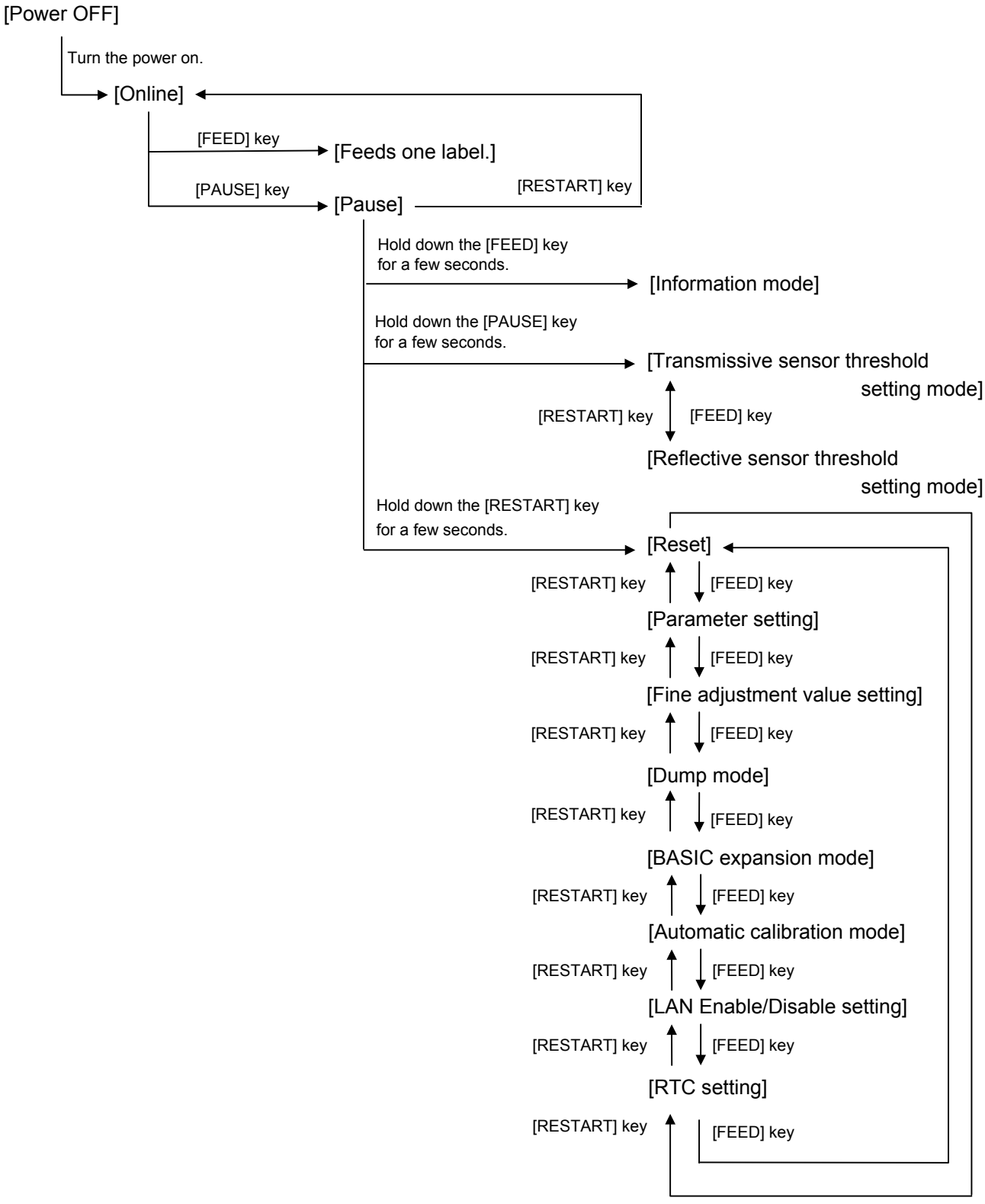


* The above shows the display of the B-SX8T. For the B-SX6T, the model name is different.

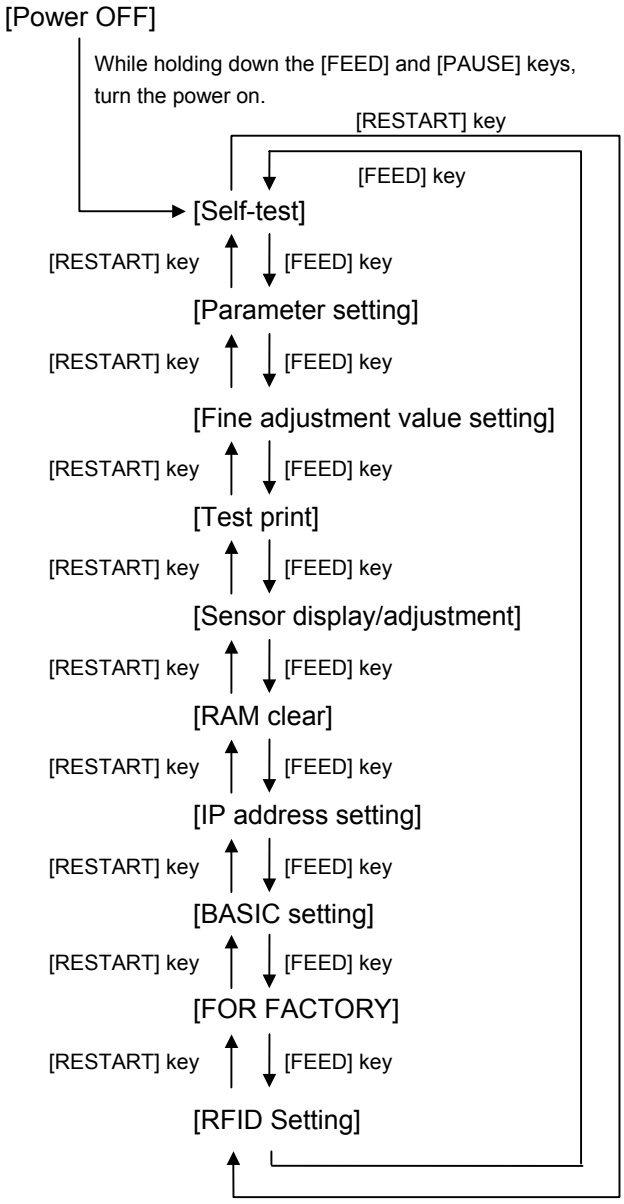
4. GENERAL VIEW OF KEY OPERATION



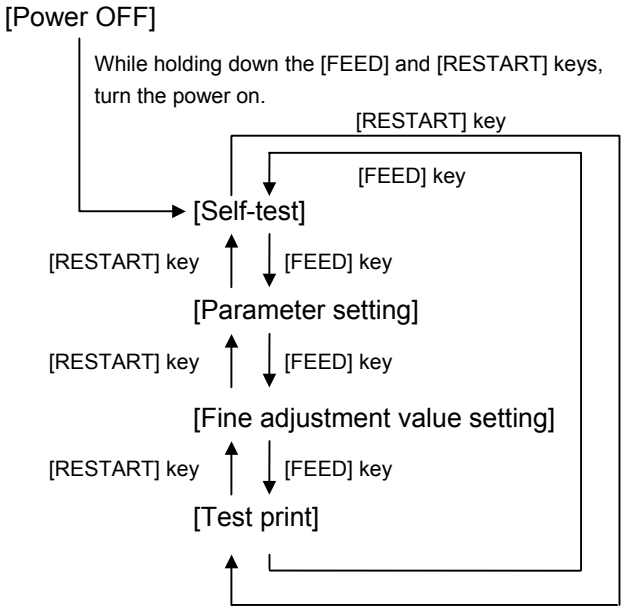
Online mode


[Power OFF]
Turn the power on.
[Online]
[FEED] key
[Feeds one label.]
[PAUSE] key
[Pause]
[RESTART] key
Hold down the [FEED] key for a few seconds.
[Information mode]
Hold down the [PAUSE] key for a few seconds.
[Transmissive sensor threshold setting mode]
[RESTART] key
[FEED] key
[Reflective sensor threshold setting mode]
Hold down the [RESTART] key for a few seconds.
[Reset]
[Parameter setting]
[Fine adjustment value setting]
[Dump mode]
[BASIC expansion mode]
[Automatic calibration mode]
[LAN Enable/Disable setting]
[RTC setting]

System mode


[Power OFF]
While holding down the [FEED] and [PAUSE] keys, turn the power on.
[RESTART] key
[FEED] key
[Self-test]
[RESTART] key
[FEED] key
[Parameter setting]
[RESTART] key
[FEED] key
[Fine adjustment value setting]
[RESTART] key
[FEED] key
[Test print]
[RESTART] key
[FEED] key
[Sensor display/adjustment]
[RESTART] key
[FEED] key
[RAM clear]
[RESTART] key
[FEED] key
[IP address setting]
[RESTART] key
[FEED] key
[BASIC setting]
[RESTART] key
[FEED] key
[FOR FACTORY]
[RESTART] key
[FEED] key
[RFID Setting]

Simplified System mode



5. ONLINE MODE

5.1 KEY FUNCTIONS

[FEED] key:

(1) Feeds or ejects one label. This key is also used to adjust a label to a proper position. When the label is not properly positioned, feed one or two blank labels using this key before printing so that the printer can start printing at the proper position.

(2) Prints data in the image buffer on one label according to the system mode setting.

NOTE: *When printing is initiated by the [FEED] key, a Clear command or a drawing command should not be sent during printing, otherwise the resulting printout will not be satisfactory showing an incorrect layout. The same may happen if the [FEED] key is pressed to start printing while data is being drawn in the image buffer.*

(3) Places the printer in the Information mode. (While the printer is in a pause state, hold down the [FEED] key for 3 sec. or more.)

* For handling of labels having the label pitch of less than 38 mm in cut issue mode, refer to the parameter setting section.

[RESTART] key:

(1) Resumes printing when the printer is in a pause state or an error state.
(2) Restores the same state as when the power is turned off and on again.
(3) Programs various parameters.

[PAUSE] key:

(1) Stops printing temporarily.
(2) Programs threshold values.

5.2 LED FUNCTIONS

[POWER] LED: Indicates that the printer power is ON or OFF.

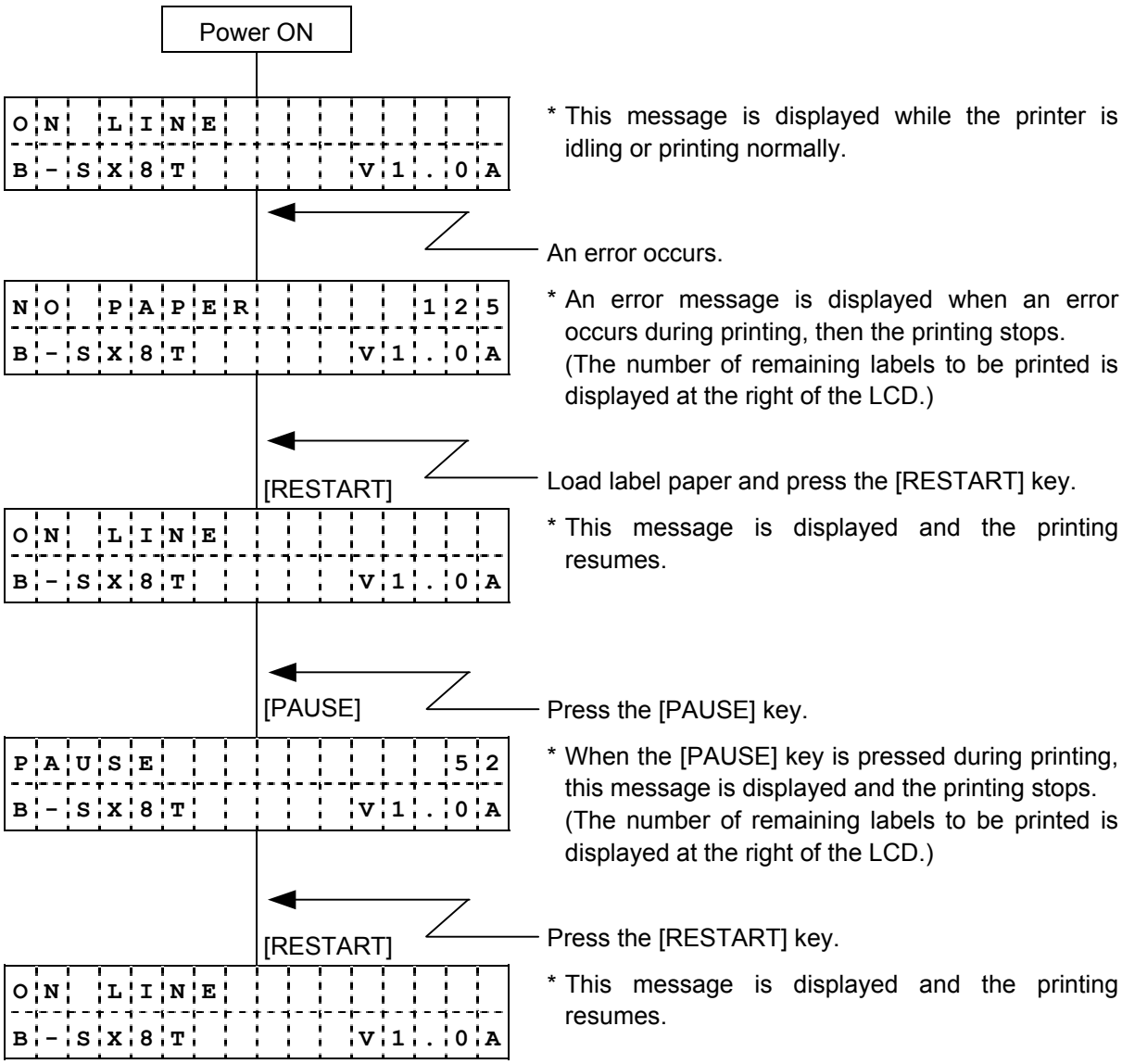
[ON LINE] LED: Indicates that the printer is ready for communication.

[ERROR] LED: Indicates that the printer is in an error state.

5.3 LCD FUNCTIONS

The LCD displays printer status messages.
LCD size: 16 digits × 2 lines

5.4 ONLINE MODE OPERATION EXAMPLE



NOTE: *[Number of remaining labels to be printed] = [Total number of labels to be printed] - [Number of labels already printed before an error occurred or the printer stopped temporarily]*

5.5 THRESHOLD SETTING

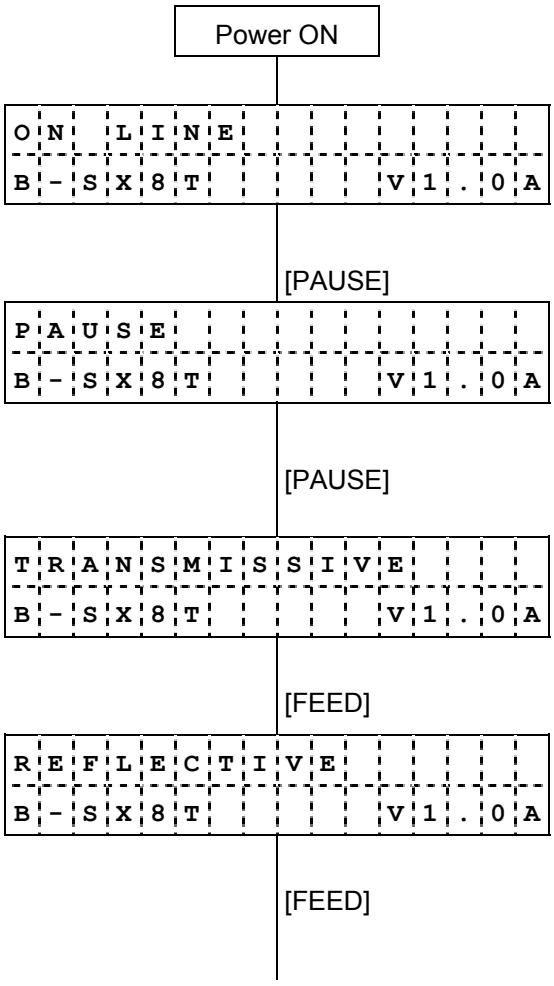
5.5.1 Outline of Threshold Setting

To always start printing at a proper position, the printer automatically corrects a print start position using a transmissive or reflective sensor. However, the printer sometimes fails to correct the print start position properly.

For label papers, a transmissive sensor is used to detect a gap between labels. When preprinted labels are used, transmissivity may vary due to inks used, and the printer may not be able to correct the print start position properly. For tag papers with black marks printed on the back side, a reflective sensor is used to detect the black marks. When reflectivity of the area other than the black marks varies, the printer may not be able to correct the print start position properly.

In these cases, the printer can correct the print start position properly by using a transmissive sensor threshold value/reflective sensor threshold value manually determined and stored in a non-volatile memory (EEPROM) by performing the key operation explained in the subsequent section, “Threshold Setting Operation Example” and by setting the type of sensor for Issue and Feed commands to “3: Transmissive Sensor (when using a manual threshold value)” or “4: Reflective Sensor (when using a manual threshold value)”.

5.5.2 Threshold Setting Operation Example



(1) Idling

(2) Load a preprinted label paper.
(No particular positioning is required.)

(3) Press the [PAUSE] key.

(4) The printer enters a pause state.

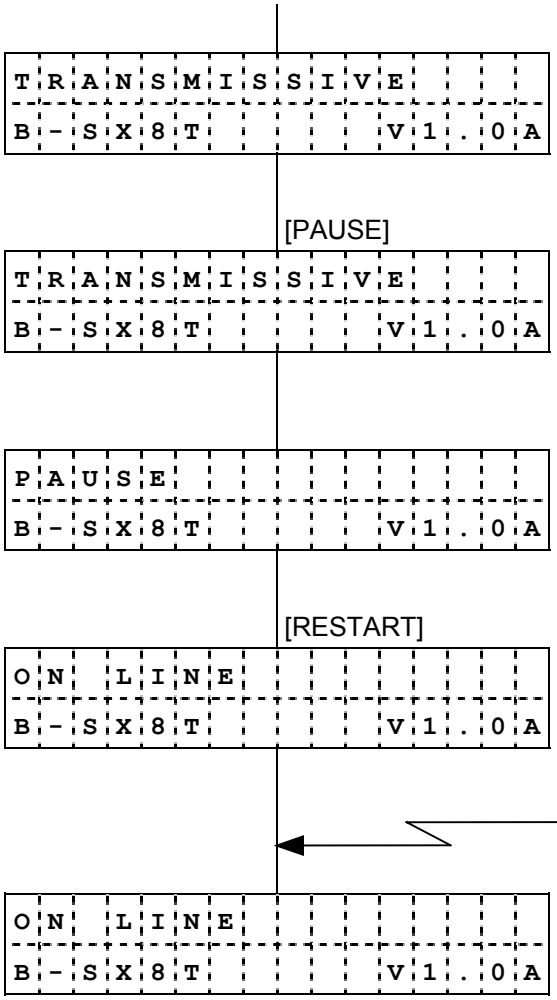
(5) Hold down the [PAUSE] key for 3 seconds or more while the printer is in a pause state.

(6) A sensor, for which a manual threshold value is to be determined, is displayed.
A message to select the transmissive sensor is displayed.

(7) Press the [FEED] key.

(8) A message to select the reflective sensor is displayed.

(9) Press the [FEED] key.



(10) A message to select the transmissive sensor is displayed.

(11) Continue holding down the [PAUSE] key.

(12) Release the [PAUSE] key when 1.5 or more labels are fed to stop printing. (The threshold setting for the selected sensor (transmissive sensor in this example) is completed.

(13) The printer enters a pause state.

(14) Press the [RESTART] key.

(15) Idling

(16) The printer starts printing according to a command sent from a PC.

<Supplementary Explanations>

(1) When the [PAUSE] key is pressed and released within 3 seconds while the printer is paused, no action is taken.

(2) To obtain an accurate threshold value, 1.5 or more labels should be fed. (If less than 1.5 labels are fed, the threshold value may not be accurate enough to start printing at a proper print start position. If the print start position is not correct, the threshold setting operation should be performed again.)

(3) When the [PAUSE] key is held down for 3 seconds or more with the head lifted, no action is taken.

(4) While the printer is feeding labels to determine a threshold value, no errors, including paper end error and cutter error, are detected.

(5) If the printer still does not start printing at the proper print start position after the threshold setting operation is performed, it can be suspected that a sensor adjustment is not proper. In this case, readjust the sensor in system mode, then perform the threshold setting operation again. (When the backing paper of a label paper is too thick, the transmissive sensor should be readjusted.)
In addition, make sure that the type of sensor for Issue and Feed commands is set to “3: Transmissive sensor (when using a manual threshold value)” or “4: Reflective sensor (when using a manual threshold value)”.

5.6 INFORMATION MODE

5.6.1 Outline of the Information Mode

In the information mode, the total feed amount (*1) counted during feed and printing operations is displayed on the LCD, and printed in units of centimeter and inch on request.

The feed amount is counted up at the end of feed or printing, and saved in the non-volatile memory.

NOTES:

1. The effective range of the feed amount (*1) is as follows. When the feed amount exceeds the maximum, the maximum value will be saved.

   In unit of centimeter: 0 to 320000000
   In unit of inch: 0.0 to 125984251.9

2. The information mode is supported by the following firmware versions:

   B-SX6T: V1.6 or later
   B-SX8T: C1.6 or later

3. In the following cases, a feed or a printing is not counted in this feed amount (*1).

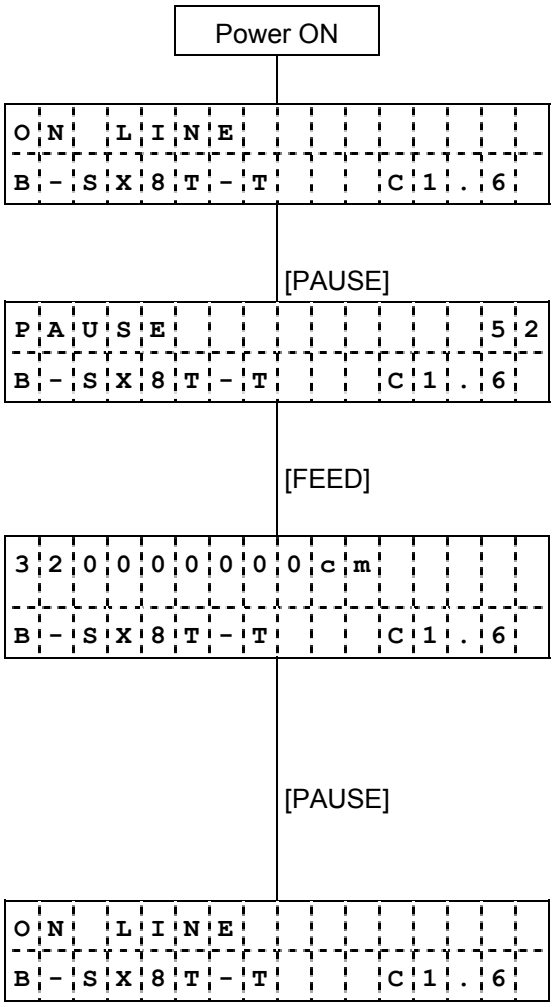
   Reverse feed, Forward feed to the strip position, Pre-strip feed, Auto forward feed, Void printing on RFID media, RFID tag position adjustment command (@003 command), Pre-reverse feed when an expansion I/O device is connected, Printing in offline (Diag. test print, maintenance counter print, test print, dump), printing in the information mode, manual threshold, and automatic calibration

4. Since the feed amount (*1) is counted based on the label pitch specified by the command, a large margin of error may be generated if the command-specified label pitch differs from the actually-measured label pitch.

5. Since the counted feed amount is saved in the non-volatile memory (EEPROM), replacement of the EEPROM is prohibited. (Except for the case the Main PC board is replaced with a service part.)

(*1): Feed amount counted up in the information mode

5.6.2 Information Mode Operation Example



(1) Idle state

* The firmware for the B-SX6T is version V.

(2) Press the [PAUSE] key.

(3) The printer enters the pause state.

(4) Hold down the [FEED] key for 3 seconds or more while the printer is in a pause state.

(5-1) A counted feed amount is displayed on the LCD. (in units of cm)

(5-2) The unit of measure is switched between centimeter and inch by pressing the [RESTART] key.

(5-3) Press the [FEED] key to return to the idle state (1).

(6) Press the [PAUSE] key to print the feed amount.

(7) The printer is reset.

(8) The printer returns to the idle state (1).

<Supplementary Explanations>

(1) When printing is performed in this mode, a quick reset is performed (*1).

Performing a quick reset causes the print count (number of labels issued) to be reset to zero and the image buffer to be cleared. When the automatic calibration is enabled, a calibration is performed after the quick reset.

When the automatic call at power on parameter is enabled in the Saved data call command, saved data will be called after a quick reset.

(*1) Do not send a command to the printer in the information mode. Doing so will cause data to be destroyed by a quick reset.

(2) Previous print conditions are applied to the printing performed in this mode, except:

Printing direction

When the mirror printing has been specified, only the mirror printing is not performed. Therefore, the bottom first mirror printing and top first mirror printing will be changed to bottom first printing and top first printing, respectively.

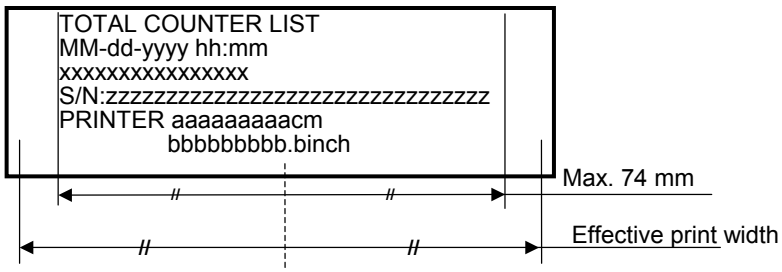
Effective print width and X-coordinate fine adjustment

When the feed amount to be printed reaches the max. number of digits (= 74 mm in width), the print position will be centered in the width of 74 mm.

(3) Before shifting to the Information mode, make sure that the printer has not received any commands related to feed or drawing. If the printer has received such commands, printing will not be performed and the printer will return to the normal state. At this time, a quick reset will not be performed.

5.6.3 Information Mode Print Sample

<Print sample>



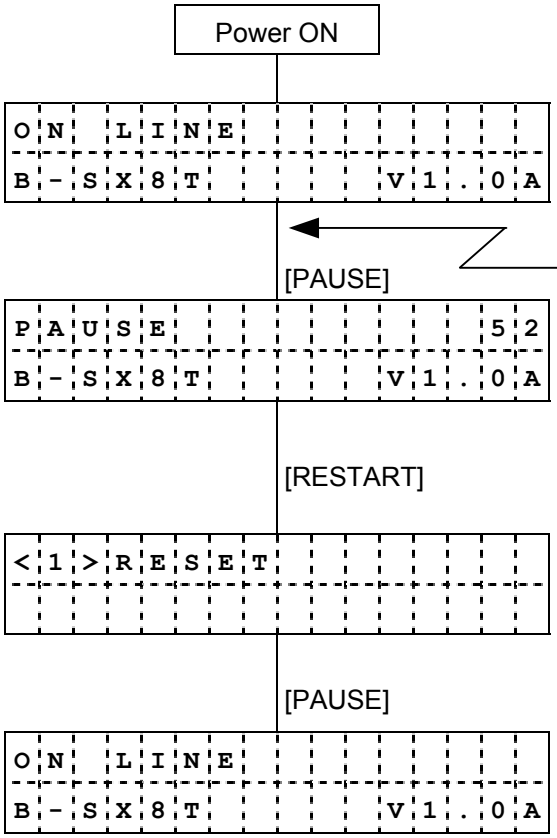
<Print data>

Item	Information		Range
1st line	Title		TOTAL COUNTER LIST
2nd line	Date (*1)	MM: Month	01 – 12
		dd: Day	01 – 31
		yyyy: Year	2000 –2099
		hh: Hour	00 – 23
		mm: Minute	00 – 59
3rd line	Model	B-SX6T 305 dpi	B-SX6T-T
		B-SX8T 305 dpi	B-SX8T-T
4th line	Serial No. (*2)		11 to 32-digit half-size alpha-numeric (A to Z, a to z, 0 to 9, space, hyphen
5th line	Feed amount in information mode (unit: cm)		0 to 320000000
6th line	Feed amount in information mode (unit: inch)		0 to 125984251.9

*1: When an optional real time clock is not installed, the date and time will be blank. (e.g. “ - - : “)

*2: In the case a serial number has never been registered to the printer, MAC address of wired LAN is printed without delimiters. If the MAC address of wired LAN cannot be obtained, this line will be blank.

5.7 RESET



(1) Idling or printing normally

(2) Press the [PAUSE] key.

* If the [PAUSE] key is pressed during printing, this message is displayed and printing stops.

(3) Hold down the [RESTART] key for 3 seconds or more while the printer is in a pause state.

(4) The reset menu is displayed.

(5) Press the [PAUSE] key.

(6) The printer returns to the same state as when the power is turned off and on again.

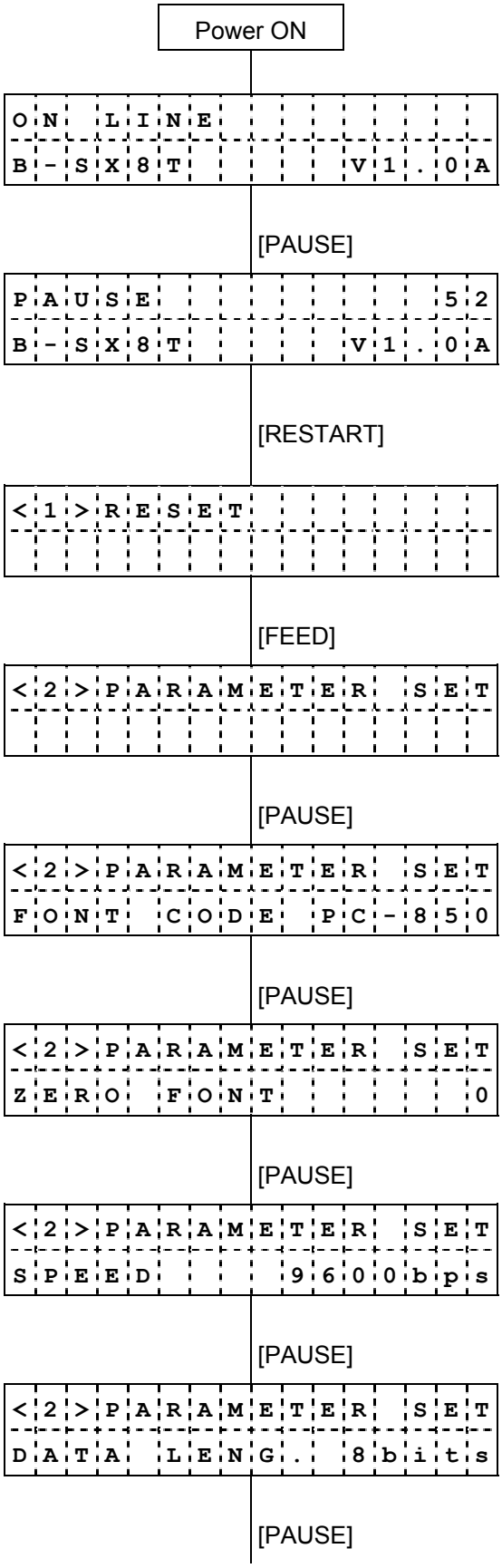
<Supplementary Explanations>

(1) When pressing the [RESTART] key can clear an error (a recoverable error by the [RESTART] key), the printer enters reset mode and displays a reset menu when the [RESTART] key is pressed for 3 seconds or more.

(2) When the [RESTART] key is pressed and released within 3 seconds in an error state or a pause state, the printer resumes printing. (The reset menu is not displayed on the LCD.)
When the [RESTART] key is pressed in a communication error state or a command error state, the printer returns to the same state as when the power is turned off and on again, whether or not the [RESTART] key is held down for 3 seconds or more.

5.8 PARAMETER SETTING

5.8.1 Parameter Setting Operation Example



(1) Idling or printing normally

(2) Press the [PAUSE] key.

(3) “PAUSE” is displayed.

(4) Hold down the [RESTART] key for 3 seconds or more while the printer is a pause state.

(5) The reset menu is displayed.

(6) Press the [FEED] key.

(7) System mode menu display
(Parameter setting)

(8) Press the [PAUSE] key.

(9) Character code setting:
Select a character code using the [FEED] and [RESTART] keys.

(10) Press the [PAUSE] key.

(11) Font zero setting:
Select a style of zero (0) using the [FEED] and [RESTART] keys.

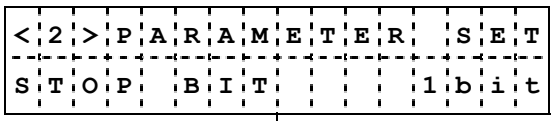
(12) Press the [PAUSE] key.

(13) RS232C baud rate setting:
Select a baud rate using the [FEED] and [RESTART] keys.

(14) Press the [PAUSE] key.

(15) RS232C data length setting:
Select a data length using the [FEED] and [RESTART] keys.

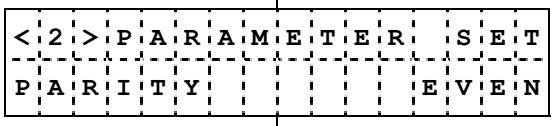
(16) Press the [PAUSE] key.



(17) RS232C stop bit length setting:
Select a stop bit length using the [FEED] and [RESTART] keys.

[PAUSE]

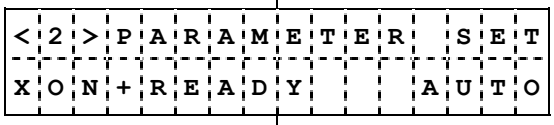
(18) Press the [PAUSE] key.



(19) RS232C parity setting:
Select a parity value using the [FEED] and [RESTART] keys.

[PAUSE]

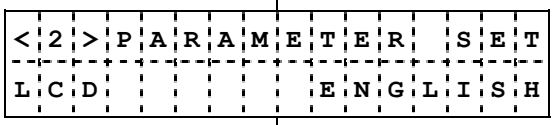
(20) Press the [PAUSE] key.



(21) RS232C flow control code setting:
Select a flow control code using the [FEED] and [RESTART] keys.

[PAUSE]

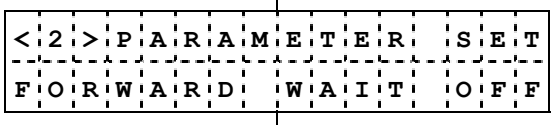
(22) Press the [PAUSE] key.



(23) Setting of LCD language:
Select a LCD language using the [FEED] and [RESTART] keys.

[PAUSE]

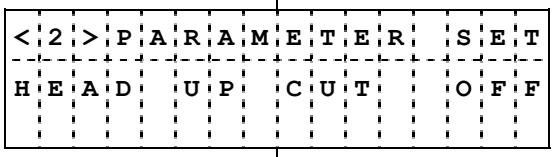
(24) Press the [PAUSE] key.



(25) Auto forward wait setting:
Enable/disable the auto forward wait function using the [FEED] and [RESTART] keys.

[PAUSE]

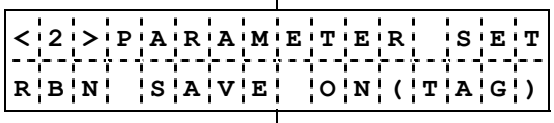
(26) Press the [PAUSE] key.



(27) Setting of head up cut in cut issue mode:
Enable/disable the head up cut function in cut issue mode using the [FEED] and [RESTART] keys.

[PAUSE]

(28) Press the [PAUSE] key.



(29) Ribbon saving function setting:
Determine whether or not the ribbon saving function is used with the [FEED] and [RESTART] keys.

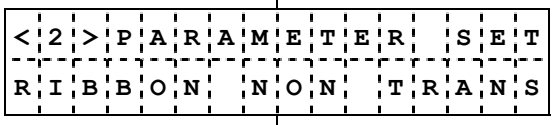
[PAUSE]

(30) Press the [PAUSE] key.

(31) Control code setting:
Select a control code using the [FEED] and [RESTART] keys.

[PAUSE]

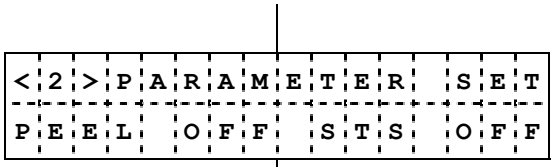
(32) Press the [PAUSE] key.



(33) Ribbon type setting:
Select a ribbon type using the [FEED] and [RESTART] keys.

[PAUSE]

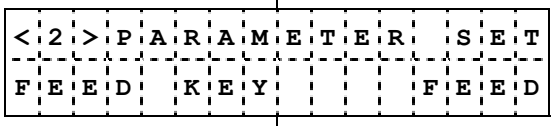
(34) Press the [PAUSE] key.



(35) Strip wait status setting:
Enable/disable the strip wait status function using the [FEED] and [RESTART] keys.

[PAUSE]

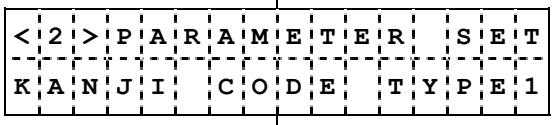
(36) Press the [PAUSE] key.



(37) FEED key function setting:
Select a function of the FEED key using the [FEED] and [RESTART] keys.

[PAUSE]

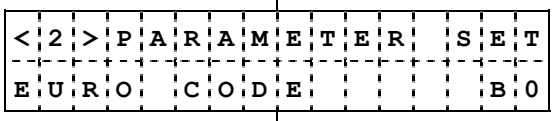
(38) Press the [PAUSE] key.



(39) KANJI code setting:
Select a KANJI code using the [FEED] and [RESTART] keys.

[PAUSE]

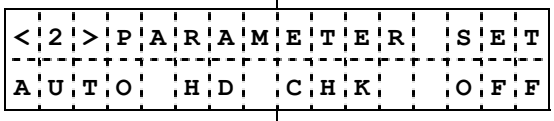
(40) Press the [PAUSE] key.



(41) EURO code setting:
Select a EURO code using the [FEED] and [RESTART] keys.

[PAUSE]

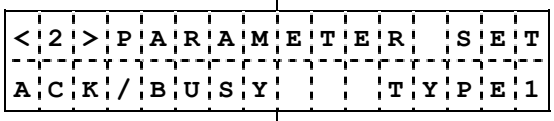
(42) Press the [PAUSE] key.



(43) Auto print head check setting:
Enable/disable the auto print head check using the [FEED] and [RESTART] keys.

[PAUSE]

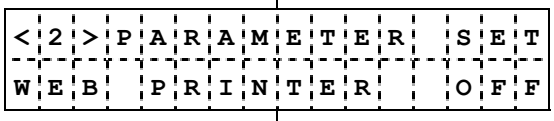
(44) Press the [PAUSE] key.



(45) Centronics ACK/BUSY timing setting:
Select an ACK/BUSY timing using the [FEED] and [RESTART] keys.

[PAUSE]

(46) Press the [PAUSE] key.



(47) Web printer function setting:
Enable/disable the web printer function using the [FEED] and [RESTART] keys.

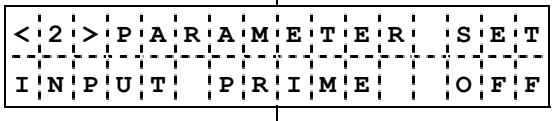
[PAUSE]

(48) Press the [PAUSE] key.

(49) Media sensor setting:
Select a media sensor type using the [FEED] and [RESTART] keys.

[PAUSE]

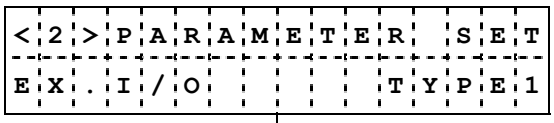
(50) Press the [PAUSE] key.



(51) Input prime setting:
Enable/disable the input prime function using the [FEED] and [RESTART] keys.

[PAUSE]

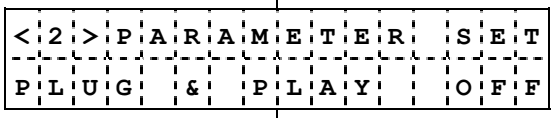
(52) Press the [PAUSE] key.



(53) Expansion I/O interface setting:
Select an expansion I/O interface using the [FEED] and [RESTART] keys.

[PAUSE]

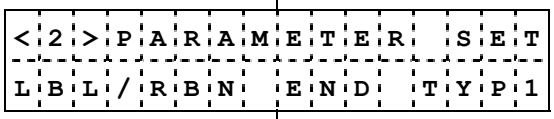
(54) Press the [PAUSE] key.



(55) Plug & Play setting:
Enable/disable the Plug & Play function using the [FEED] and [RESTART] keys.

[PAUSE]

(56) Press the [PAUSE] key.



(57) Label end/ribbon end setting:
Select a label end/ribbon end operation using the [FEED] and [RESTART] keys.

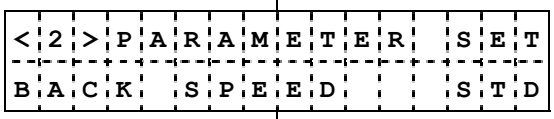
[PAUSE]

(58) Press the [PAUSE] key.

(59) Pre-strip setting:

[PAUSE]

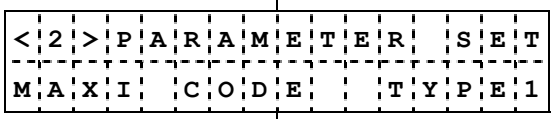
(60) Press the [PAUSE] key.



(61) Reverse feed speed setting:
Select a reverse feed speed using the [FEED] and [RESTART] keys.

[PAUSE]

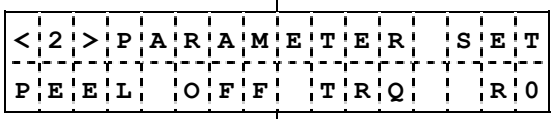
(62) Press the [PAUSE] key.



(63) MaxiCode specification setting:
Select a type of MaxiCode specification using the [FEED] and [RESTART] keys.

[PAUSE]

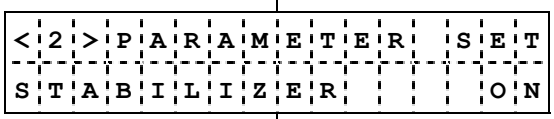
(64) Press the [PAUSE] key.



(65) Strip motor torque setting:

[PAUSE]

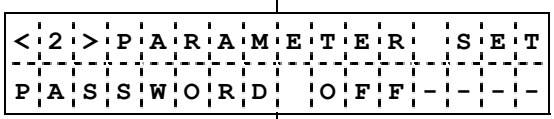
(66) Press the [PAUSE] key.



(67) Stabilizer function setting:
Select whether to use the stabilizer function using the [FEED] and [RESTART] keys.

[PAUSE]

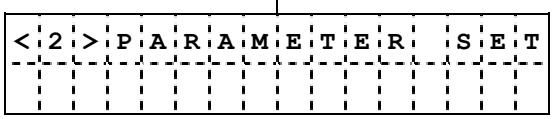
(68) Press the [PAUSE] key.



(69) System mode password operation setting:
Select the system mode password operation using the [FEED] and [RESTART] keys.

[PAUSE]

(70) Press the [PAUSE] key.



(71) The parameter setting menu is displayed.

5.8.2 Parameter Setting Items

For details, refer to the section, “6.3 VARIOUS PARAMETER SETTING”.

(1) Character code (FONT CODE)

- PC-850
- PC-852
- PC-857
- PC-8
- PC-851
- PC-855
- PC-1250
- PC-1251
- PC-1252
- PC-1253
- PC-1254
- PC-1257
- LATIN9
- Arabic
- PC-866
- UTF-8

(2) Character zero (ZERO FONT)

- 0 (without slash)
- Ø (with slash)

(3) RS-232C baud rate (SPEED)

- 2400 bps
- 4800 bps
- 9600 bps
- 19200 bps
- 38400 bps
- 115200 bps

(4) RS-232C data length (DATA LENG.)

- 7 bits
- 8 bits

(5) RS-232C stop bit length (STOP BIT)

- 1 bit
- 2 bits

(6) RS-232C parity (PARITY)

- NONE (No parity)
- EVEN
- ODD

(7) RS-232C flow control code (XON+READY)

- XON/XOFF protocol (An XON is not output when the power is on and an XOFF is not output when the power is off.)
- READY/BUSY (DTR) protocol (An XON is not output when the power is on and an XOFF is not output when the power is off.)
- XON/XOFF + READY/BUSY (DTR) protocol (An XON is output when the power is on and an XOFF is output when the power is off)
- XON/XOFF protocol (An XON is output when the power is on and an XOFF is output when the power is off)
- RTS protocol (An XON is not output when the power is on and an XOFF is not output when the power is off)

(8) LCD language (LCD)

- ENGLISH
- GERMAN
- FRENCH
- DUTCH
- SPANISH
- JAPANESE
- ITALIAN

NOTE: *Japanese character codes are slightly different from those of other languages. For details, refer to the External Equipment Interface Specification (EAA-2298).*

(9) Auto forward wait (FORWARD WAIT)

- ON: The auto forward wait function is enabled.
- POSITION: A fine adjustment value for a stop position after a forward feed is set.
- OFF: The auto forward wait function is disabled.

NOTE: *When the auto forward wait parameter is set to ON, the printer enters a pause state after a label is issued. The printer automatically starts to feed the label approximately 14 mm forward when a time of 1 second or more passes in the pause state, then stops.*

(10) Head up cut in cut issue mode (HEAD UP CUT)

- ON (Activated: Head up is performed.)
- OFF (Not activated: Head up is not performed.)

(11) Ribbon saving function (RBN SAVE)

- ON (TAG) (Activated: when the head lever position is “TAG”)
- ON (LBL) (Activated: when the head lever position is “LABEL”)
- OFF (Not activated)

(12) Control code (CODE)

- Automatic selection (ESC, LF, NUL/{ | })
- Manual selection (ESC, LF, NUL method)
- Manual selection ({ | } method)
- Any code set

(13) Ribbon type (RIBBON)

- TRANS (Transparent ribbon)
- NON TRANS (Non-transparent ribbon)

(14) Strip wait status (PEEL OFF STS)

- OFF: The strip wait status function is disabled.
- ON: The strip wait status function is enabled.

(15) FEED key function (FEED KEY)

- FEED: Feeds one label.
- PRINT: Prints data in the image buffer on one label.

(16) KANJI code (KANJI CODE)

- TYPE1 (For Windows codes)
- TYPE2 (For original codes)

(17) EURO code (EURO CODE)

- 20H to FFH

(18) Auto print head check (AUTO HD CHK)

- ON: An auto print head check is performed when the power is turned on.
- OFF: An auto print head check is not performed when the power is turned on.

(19) Centronics ACK/BUSY timing (ACK/BUSY)

- TYPE1 BUSY goes low at the same time as when ACK goes high.
- TYPE2 BUSY goes low at the same time as when ACK goes low.

(20) Web printer function (WEB PRINTER)

- ON: The web printer function is enabled.
- OFF: The web printer function is disabled.

(21) Media sensor (SENS POSI)

- CENTER (Fixed sensor)
- EDGE (Movable sensor)

(22) Input prime (INPUT PRIME)

- OFF: The reset process is not performed.
- ON: The reset process is performed.

(23) Expansion I/O interface (EX. I/O)

- TYPE1: Standard mode
- TYPE2: In-line mode

(24) Plug & Play (PLUG & PLAY)

- ON: A Plug & Play operation is performed.
- OFF: A Plug & Play operation is performed.

(25) Label end/ribbon end (LBL/RBN END)

- TYPE1: When a label end or ribbon end is detected, the printer stops even if it is printing.
- TYPE2: When a label end or ribbon end is detected, the printer prints the current label as far as possible, then stops.

(26) Pre-strip (PRE PEEL OFF)

- OFF: A pre-strip operation is not performed.

(27) Reverse feed speed (BACK SPEED)

- STD: 3 ips
- LOW: 2 ips

(28) MaxiCode specification (MAXI CODE)

- TYPE1: Compatible with a current version
- TYPE2: Special specification

(29) Strip motor torque (PEEL OFF TRQ)

- R0: For standard papers

(30) Stabilizer function (STABILIZER)

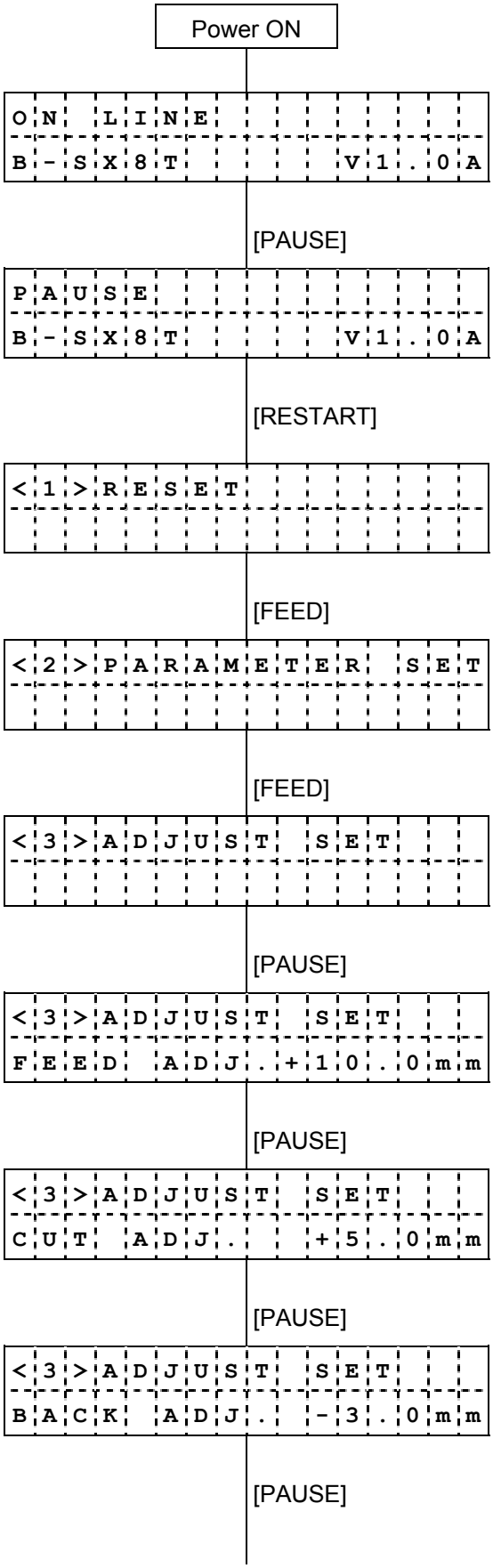
- ON: Enabled only in direct thermal print mode and disabled in transfer thermal print mode
- OFF: Not enabled

(31) System mode password setting (PASSWORD)

- 0000 to FFFF

5.9 FINE ADJUSTMENT VALUE SETTING

5.9.1 Fine Adjustment Value Setting Operation Example



(1) Idling

(2) Press the [PAUSE] key.

(3) "PAUSE" is displayed.

(4) Hold down the [RESTART] key for 3 seconds or more while the printer is in a pause state.

(5) The reset menu is displayed.

(6) Press the [FEED] key.

(7) System mode menu display
(Parameter setting)

(8) Press the [FEED] key.

(9) System mode menu display
(Fine adjustment value setting)

(10) Press the [PAUSE] key.

(11) Feed fine adjustment:
Set a fine adjustment value using the [FEED] and [RESTART] keys.

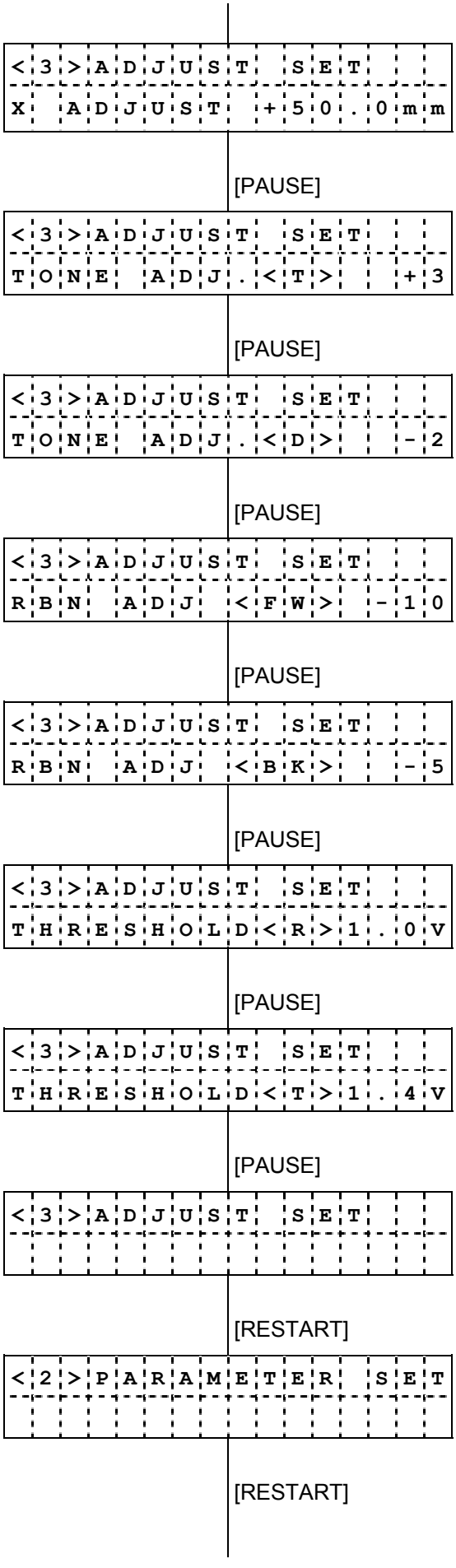
(12) Press the [PAUSE] key.

(13) Cut (strip) position fine adjustment:
Set a fine adjustment value using the [FEED] and [RESTART] keys.

(14) Press the [PAUSE] key.

(15) Reverse feed fine adjustment:
Set a fine adjustment value using the [FEED] and [RESTART] keys.

(16) Press the [PAUSE] key.



(17) X-coordinate fine adjustment:
Set a fine adjustment value using the [FEED] and [RESTART] keys.

(18) Press the [PAUSE] key.

(19) Print density fine adjustment (Thermal transfer print mode):
Set a fine adjustment value using the [FEED] and [RESTART] keys.

(20) Press the [PAUSE] key.

(21) Print density fine adjustment (Direct thermal print mode):
Set a fine adjustment value using the [FEED] and [RESTART] keys.

(22) Press the [PAUSE] key.

(23) Ribbon motor drive voltage fine adjustment (Take-up):
Set a fine adjustment value using the [FEED] and [RESTART] keys.

(24) Press the [PAUSE] key.

(25) Ribbon motor drive voltage fine adjustment (Feed):
Set a fine adjustment value using the [FEED] and [RESTART] keys.

(26) Press the [PAUSE] key.

(27) Reflective sensor manual threshold fine adjustment:
Set a fine adjustment value using the [FEED] and [RESTART] keys.

(28) Press the [PAUSE] key.

(29) Transmissive sensor manual threshold fine adjustment:
Set a fine adjustment value using the [FEED] and [RESTART] keys.

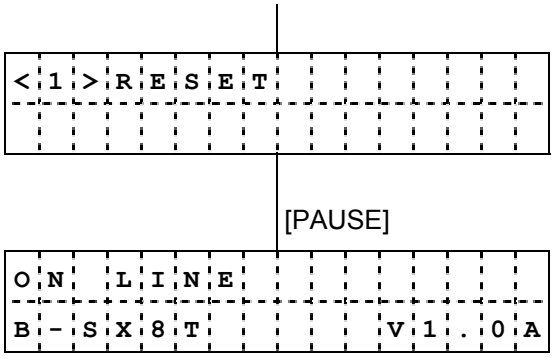
(30) Press the [PAUSE] key.

(31) The find adjustment value setting menu is displayed.

(32) Press the [RESTART] key.

(33) The parameter setting menu is displayed.

(34) Press the [RESTART] key.



(35) The reset menu is displayed.

(36) Press the [PAUSE] key.

(37) The printer returns to the same state as when the power is turned off and on again.

5.9.2 Fine Adjustment Value Setting Items

For details, refer to the section, “6.4 VARIOUS FINE ADJUSTMENT VALUE SETTING”.

(1) Feed fine adjustment (FEED ADJ.)
-50.0 mm to +50.0 mm (in 0.1 mm units)

(2) Cut (strip) position fine adjustment (CUT ADJ.)
-50.0 mm to +50.0 mm (in 0.1 mm units)

(3) Reverse feed fine adjustment (BACK ADJ.)
-9.9 mm to +9.9 mm (in 0.1 mm units)

(4) X-coordinate fine adjustment (X ADJUST)
-99.9 mm to +99.9 mm (in 0.1 mm units)

(5) Print density fine adjustment (Thermal transfer print mode) (TONE ADJ.<T>)
-10 step to +10 step (in units of 1 step)

(6) Print density fine adjustment (Direct thermal print mode) (TONE ADJ.<D>)
-10 step to +10 step (in units of 1 step)

(7) Ribbon motor drive voltage fine adjustment (Take-up) (RBN ADJ <FW>)
-15 step to +0 step (in units of 1 step)

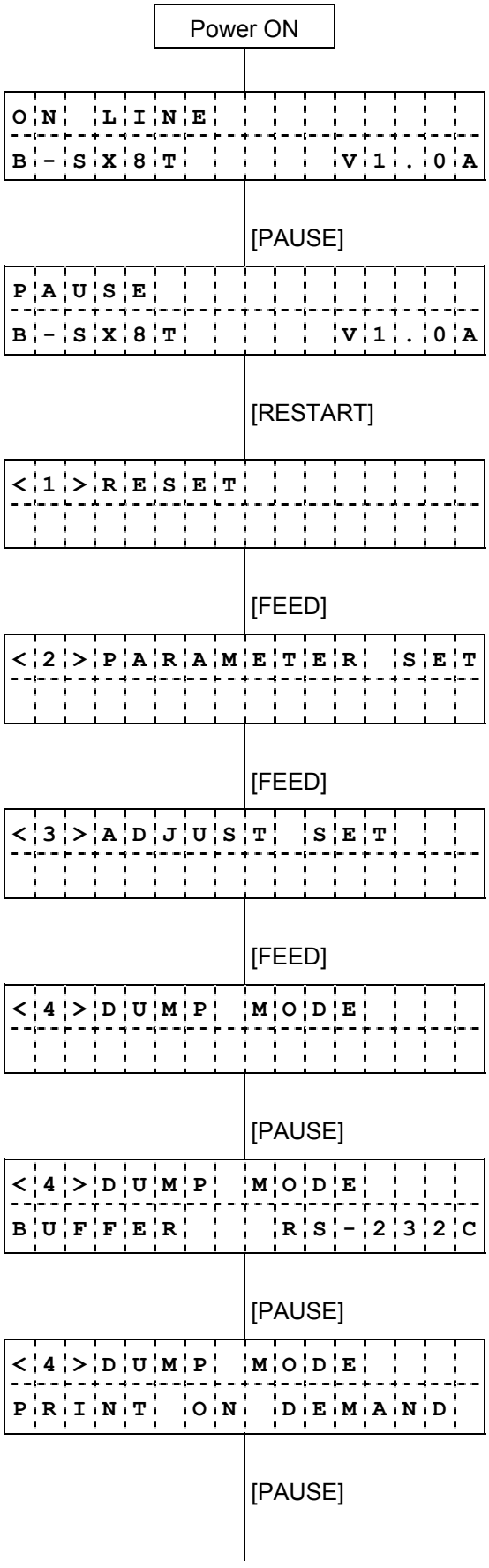
(8) Ribbon motor drive voltage fine adjustment (Feed) (RBN ADJ <BK>)
-15 step to +10 step (in units of 1 step)

(9) Reflective sensor manual threshold fine adjustment (THRESHOLD <R>)
0.0 V to 4.0 V (in 0.1 V units)

(10) Transmissive sensor manual threshold fine adjustment (THRESHOLD <T>)
0.0 V to 4.0 V (in 0.1 V units)

5.10 DUMPING OF RECEIVE BUFFER

5.10.1 Operation Example of Receive Buffer Dumping



(1) Idling

(2) Press the [PAUSE] key.

(3) “PAUSE” is displayed.

(4) Hold down the [RESTART] key for 3 seconds or more while the printer is in a pause state.

(5) The reset menu is displayed.

(6) Press the [FEED] key.

(7) System mode menu display
(Parameter setting)

(8) Press the [FEED] key.

(9) System mode menu display
(Fine adjustment value setting)

(10) Press the [FEED] key.

(11) The receive buffer dumping menu is displayed.

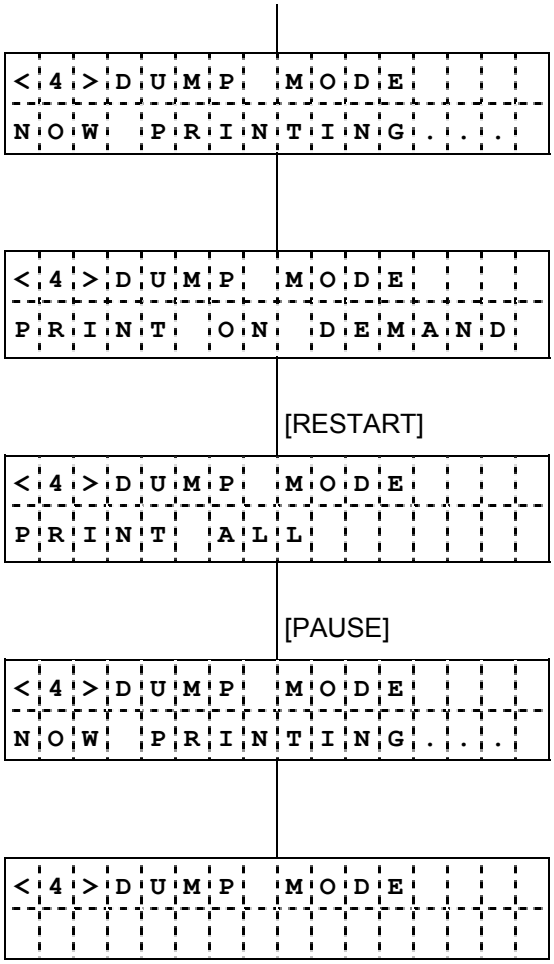
(12) Press the [PAUSE] key.

(13) Setting of receive buffer to be dumped:
Select a receive buffer to be dumped using the [FEED] and [RESTART] keys

(14) Press the [PAUSE] key.

(15) Print method setting:
Select a print method using the [FEED] and [RESTART] keys.

(16) Press the [PAUSE] key.



(17) Start of printing receive buffer data

(18) 166 lines of data are printed.

(19) Print method setting:
Select a print method using the [FEED] and [RESTART] keys.

(20) Press the [RESTART] key.

(21) Print method setting:
Select a print method using the [FEED] and [RESTART] keys.

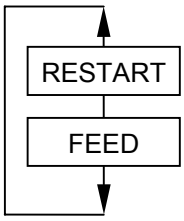
(22) Press the [PAUSE] key.

(23) Start of printing the remaining receive buffer data

(24) All of the remaining data is printed.

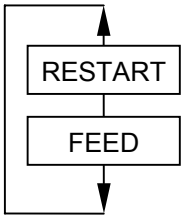
(25) After printing is completed, the display is returned to the receive buffer dumping menu.

Receive buffer (BUFFER)



- RS-232C RS-232C receive buffer
- CENTRO. Centronics receive buffer
- NETWORK Network I/F receive buffer
- BASIC1 Buffer between the BASIC interpreter I/F and the Interpreter
- BASIC2 Buffer between the BASIC interpreter and the printer
- USB USB receive buffer
- RF-ID RFID receive buffer

Print method (PRINT)



- ON DEMAND Prints 166 lines of data (approx. 50 cm), then stops.
- ALL Prints all data in the receive buffer, then stops.

Data in the receive buffer is printed in the format below.

```
00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00   ................
00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00   ................
00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00   ................
00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00   ................
7B 41 58 3B 2B 30 30 30 2C 2B 30 30 30 2C 2B 30   {AX;+000,+000,+0
30 7C 7D 7B 44 30 37 37 30 2C 31 31 30 30 2C 30   0|}{D0760,1100,0
37 34 30 7C 7D 7B 43 7C 7D 7B 4C 43 3B 30 30 33   740|}{C|}{LC;003
30 2C 30 30 32 30 2C 30 30 33 30 2C 30 36 36 30   0,0020,0030,0660
2C 30 2C 32 7C 7D 7B 4C 43 3B 30 30 37 30 2C 30   ,0,2|}{LC;0070,0
30 32 30 2C 30 30 37 30 2C 30 36 36 30 2C 30 2C   020,0070,0660,0,
39 7C 7D 7B 4C 43 3B 30 30 35 30 2C 30 30 32 30   9|}{LC;0050,0020

44 45 46 47 48 49 4A 7C 7D 7B 50 43 31 30 3B 30   DEFGHIJ|}{PC10;0
33 35 30 2C 30 34 30 30 2C 31 2C 31 2C 4B 2C 30   350,0400,1,1,K,0
30 2C 42 3D 41 42 43 44 65 66 67 68 69 6A 6B 6C   0,B=ABCDefghijkl

6D 6E 6F 70 7C 7D 7B 50 56 30 32 3B 30 33 33 30   mnop|}{PV02;0330
2C 30 36 36 30 2C 30 32 37 30 2C 30 32 35 30 2C   ,0660,0270,0250,
41 2C 30 30 2C 42 3D 42 7C 7D 7B 50 56 30 33 3B   A,00,B=B|}{PV03;

3B 30 39 30 30 2C 30 31 38 30 2C 54 2C 48 2C 30   ;0900,0180,T,H,0
35 2C 41 2C 30 3D 31 32 33 34 35 36 37 38 39 30   5,A,0=1234567890
41 42 43 44 45 7C 7D 00 00 00 00 00 00 00 00 00   ABCDE|}.........
```

Feed direction

Print conditions:

- Print width: Approximately 100 mm
- Sensor: Not used
- Print speed: 4 ips
- A currently selected print mode (thermal transfer/direct thermal) is used.
- Data of 16 bytes is printed on one line.
- Data is printed, starting from new data to old data.
- Data pointed by a receive buffer write pointer is printed in bold type.

Size of receive buffer

RS-232C:	1 MB (Max. 65536 lines)
Centronics:	1 MB (Max. 65536 lines)
Network I/F:	1 MB (Max. 65536 lines)
BASIC1:	8 KB (Max. 512 lines)
BASIC2:	8 KB (Max. 512 lines)
USB:	1 MB (Max. 65536 lines)
RFID	8 KB (Max. 512 lines)

NOTES:

1. *To print all data in a receive buffer, the following label length is required.*

RS-232C:	198.2 m
Centronics:	198.2 m
Network I/F:	198.2 m
BASIC1:	2 m
BASIC2:	2 m
USB:	198.2 m
RFID	2 m

2. *If an error occurs during printing in receive buffer dump mode, the printer displays an error message, then stops. The error is cleared by pressing the [PAUSE] key, and the display is returned to the receive buffer dumping menu "<4> DUMP MODE". After the error is cleared, data is not automatically reprinted.*

5.11 BASIC EXPANSION MODE

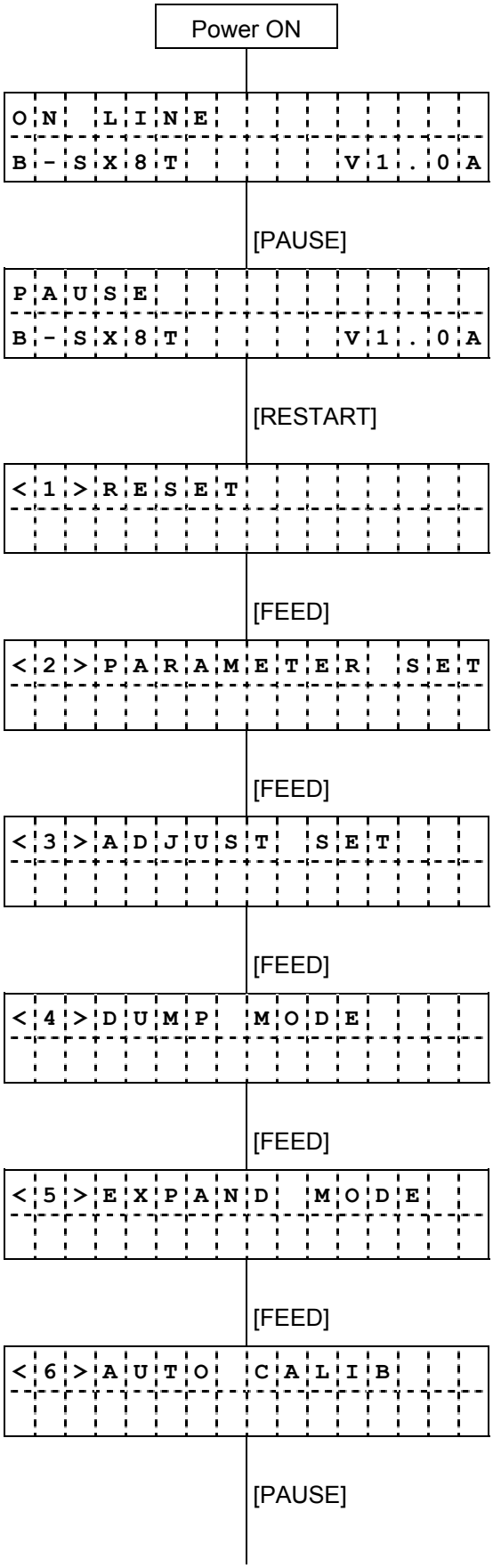
It is possible to execute the BASIC expansion mode program in BASIC expansion mode under the following conditions:

- The BASIC expansion mode program has already been loaded.
- The BASIC enable setting mode is selected.

The basic expansion mode ends when the basic expansion program is exited.

5.12 AUTOMATIC CALIBRATION SETTING

5.12.1 Operation Example of Automatic Calibration Setting



(1) Idling or printing normally

(2) Press the [PAUSE] key.

(3) “PAUSE” is displayed.

(4) Hold down the [RESTART] key for 3 seconds or more while the printer is in a pause state.

(5) The reset menu is displayed.

(6) Press the [FEED] key.

(7) System mode menu display
(Parameter setting)

(8) Press the [FEED] key.

(9) System mode menu display
(Fine adjustment value setting)

(10) Press the [FEED] key.

(11) The receive buffer dumping menu is displayed.

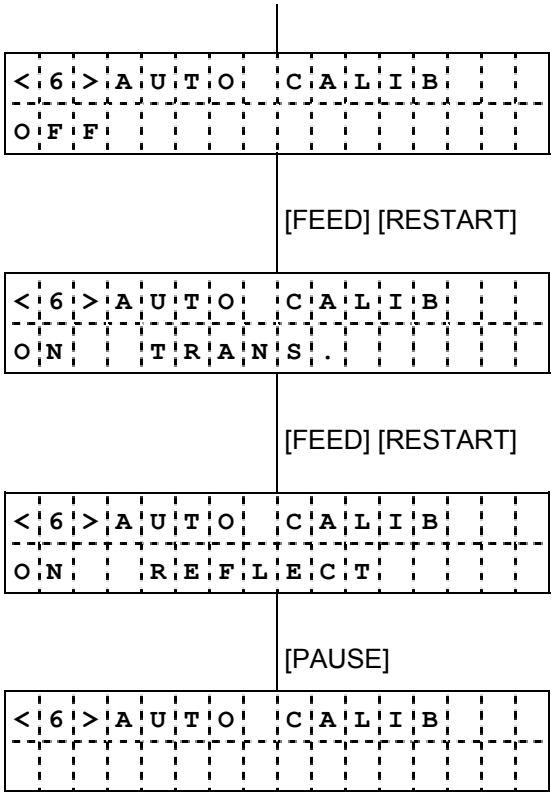
(12) Press the [FEED] key.

(13) The BASIC expansion mode menu is displayed.

(14) Press the [FEED] key.

(15) The automatic calibration menu is displayed.

(16) Press the [PAUSE] key.



(17) The current setting is displayed.

(18) Change the setting using the [FEED] and [RESTART] keys.

(19) The new setting is displayed.

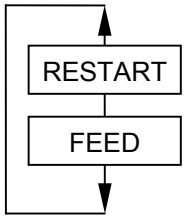
(20) Change the setting using the [FEED] and [RESTART] keys.

(21) The new setting is displayed

(22) Press the [PAUSE] key to save the setting.

(23) The automatic calibration menu is displayed.

Automatic calibration setting (AUTO CALIB)



• OFF	Disabled
• ON TRANS.	The transmissive sensor is enabled.
• ON REFLECT	The reflective sensor is enabled.

Explanation of operation

(1) When AUTO CALIB is enabled, automatic calibration starts at open/close of the head after the power is turned on.

(2) When AUTO CALIB is enabled, operation parameters specified by commands, including paper length, effective print length, and sensor type, are ignored.

(3) When ON REFLECT is selected, an area of the lowest sensor input value is regarded as a black mark. A threshold value for the black mark is determined by adding a reflective sensor's finely adjusted manual threshold value to the lowest input value.

(4) When ON TRANS. is selected, an area of the highest sensor input value is regarded as a gap. A threshold value for the gap is determined by deducting a transmissive sensor's finely adjusted manual threshold value from the lowest input value.

(5) Samples of the sensor input value are taken until paper is fed 160.0 mm after the start of operation and the threshold value is determined. If two or more black marks/gaps have been found, the paper length is calculated and the paper feed stops having 1 mm distance to the trailing edge of a measured black mark/gap.

(6) If the second black mark/gap has not been found under the above conditions, the paper feed continues. If the second black mark/gap is not found even after paper is fed at a maximum of 500 mm, it is regarded as a paper feed jam and the paper feed stops.

(7) Paper pitch to be supported is 10.0 mm to 150.0 mm.

(8) When the cutter is installed and a previous issue was performed in cut issue mode, paper is cut and ejected after automatic calibration completes.

(9) When the automatic calibration is in operation, paper does not stop at a strip position even in strip or special strip mode.

(10) When the automatic calibration is in operation, a label end error or head open error causes the printer to stop. Opening the head can clear the error and the automatic calibration resumes.

(11) Whenever the automatic calibration is in operation, the ribbon is driven. Even when no ribbon is detected, it does not cause a ribbon error. No ribbon is included in the operation conditions after the automatic calibration completes

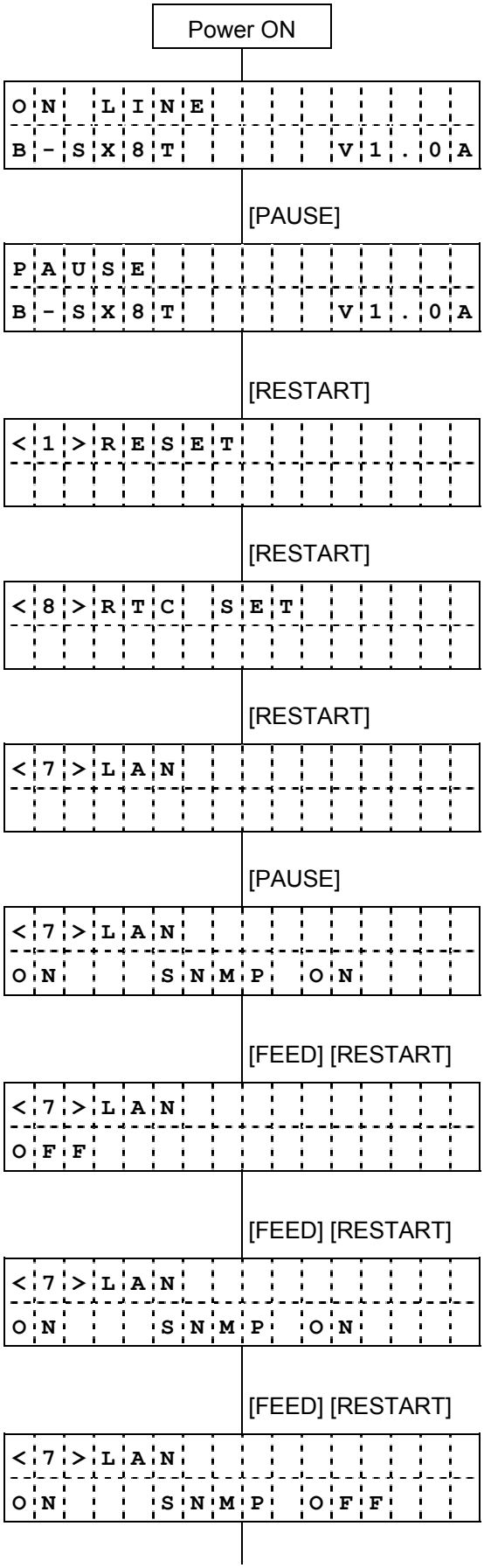
(12) When the automatic calibration is in operation, ribbon saving function is disabled even if its parameter is set to ON.

(13) When the printing speed is set to 8”/sec., it will be automatically changed to 4”/sec. during an automatic calibration.

(14) An automatic forward feed is not performed immediately after an automatic calibration, even if the auto forward wait parameter is set to ON.

5.13 LAN ENABLE/DISABLE SETTING

5.13.1 Operation Example of LAN Enable/Disable Setting



(1) Idling or printing normally

(2) Press the [PAUSE] key.

(3) "PAUSE" is displayed.

(4) Hold down the [RESTART] key for 3 seconds or more while the printer is in a pause state.

(5) The reset menu is displayed.

(6) Press the [RESTART] key.

(7) The RTC setting menu is displayed.

(8) Press the [RESTART] key.

(9) LAN enable/disable setting menu display

(10) Press the [PAUSE] key.

(11) The current setting is displayed.

(12) Change the setting from LAN ON to OFF using the [FEED] and [RESTART] keys.

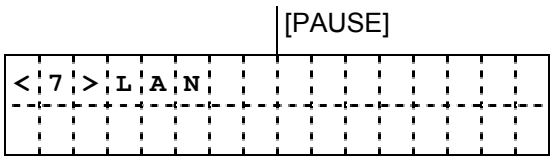
(13) The new setting is displayed.

(14) Change the setting from LAN OFF to ON using the [FEED] and [RESTART] keys.

(15) The new setting is displayed.

(16) Change the setting from SNMP ON to OFF using the [FEED] and [RESTART] keys.

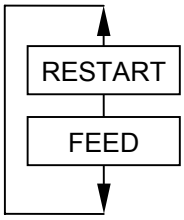
(17) The new setting is displayed.



(18) Press the [PAUSE] key.

(19) LAN enable/disable setting menu display

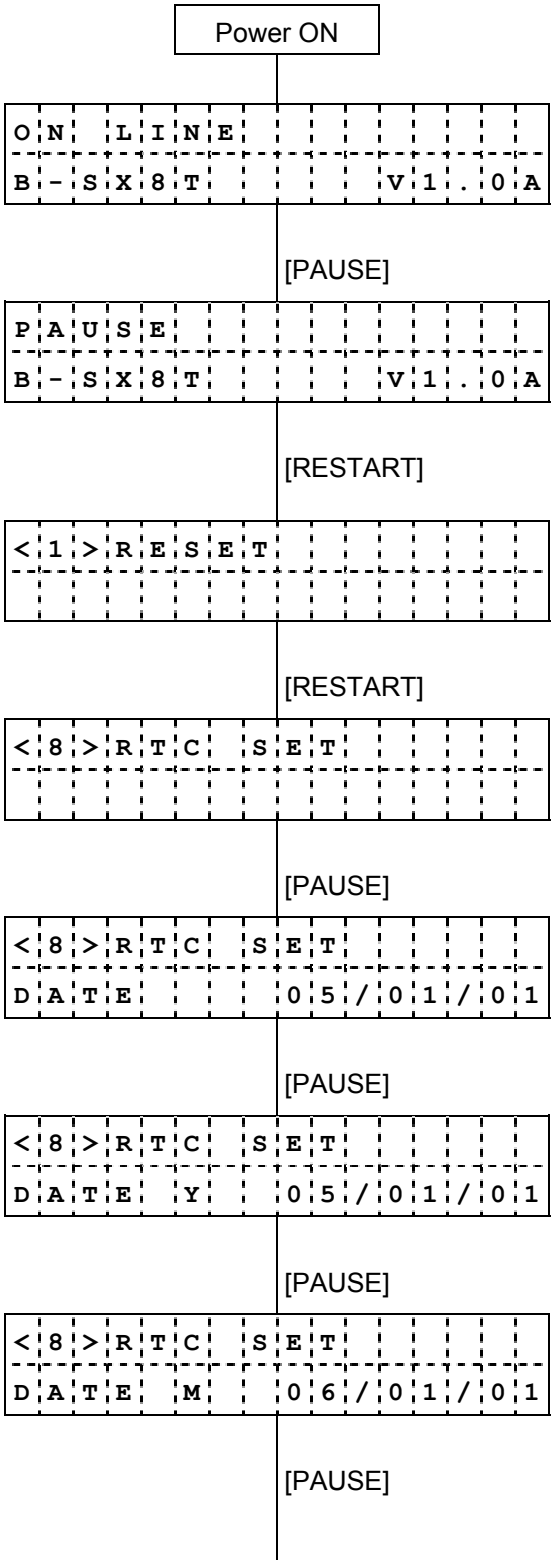
LAN enable/disable (LAN)



• OFF	Disabled
• ON SNMP ON	LAN is enabled, SNMP is enabled.
• ON SNMP OFF	LAN is enabled, SNMP is disabled.

5.14 REAL TIME CLOCK (RTC) SETTING

5.14.1 RTC Setting Operation Example



(1) Idling or printing normally

(2) Press the [PAUSE] key.

(3) "PAUSE" is displayed.

(4) Hold down the [RESTART] key for 3 seconds or more while the printer is in a pause state.

(5) The reset menu is displayed.

(6) Press the [RESTART]] key.

(7) RTC setting menu display

(8) Press the [PAUSE] key.

(9) The current date (Year/Month/Day) is displayed.

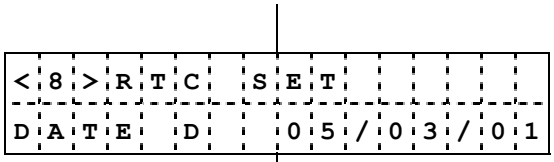
(10) Press the [PAUSE] key.

(11) Change the year using the [FEED] and [RESTART] keys.

(12) Press the [PAUSE] key.

(13) Change the month using the [FEED] and [RESTART] keys.

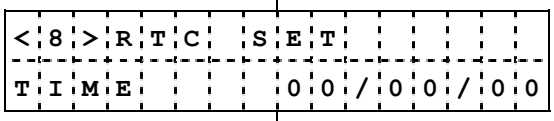
(14) Press the [PAUSE] key.



(15) Change the day using the [FEED] and [RESTART] keys.

[PAUSE]

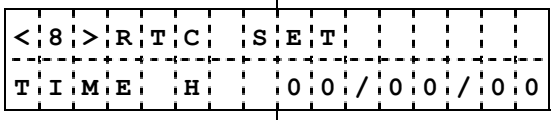
(16) Press the [PAUSE] key to save the setting.



(17) The current time is displayed.

[PAUSE]

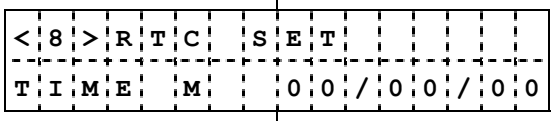
(18) Press the [PAUSE] key.



(19) Change the hour using the [FEED] and [RESTART] keys.

[PAUSE]

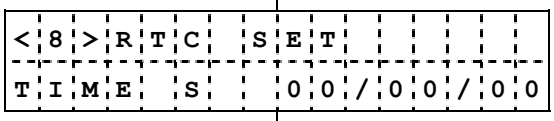
(20) Press the [PAUSE] key.



(21) Change the minute using the [FEED] and [RESTART] keys.

[PAUSE]

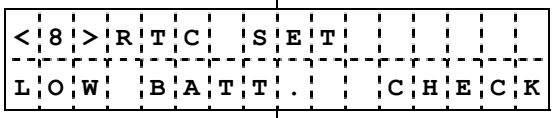
(22) Press the [PAUSE] key.



(23) Change the second using the [FEED] and [RESTART] keys.

[PAUSE]

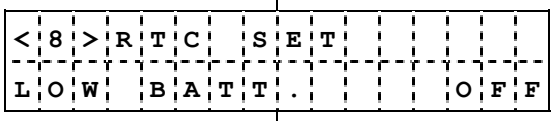
(24) Press the [PAUSE] key to save the setting.



(25) The low battery check setting menu is displayed.

[PAUSE]

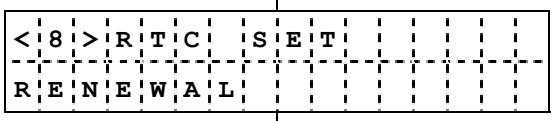
(26) Press the [PAUSE] key.



(27) The current setting is displayed.
Change the setting using the [FEED] and [RESTART] keys.

[PAUSE]

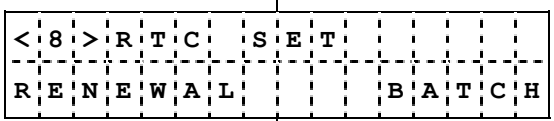
(28) Press the [PAUSE] key to save the setting.



(29) The RTC data renewal timing setting menu is displayed.

[PAUSE]

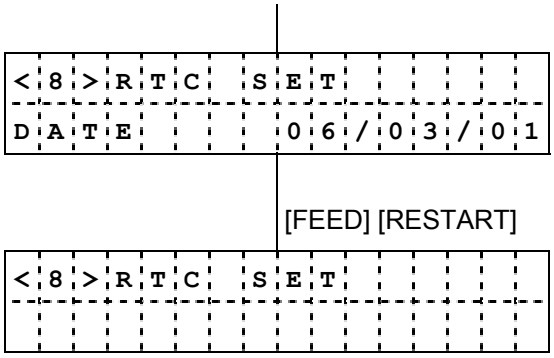
(30) Press the [PAUSE] key.



(31) The current setting is displayed.
Change the setting using the [FEED] and [RESTART] keys.

[PAUSE]

(32) Press the [PAUSE] key to save the setting.

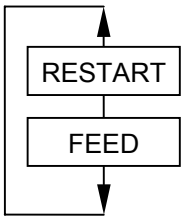


(33) The current date is displayed.

(34) Press the [FEED] and [RESTART] keys.

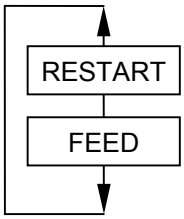
(35) The RTC setting menu is displayed.

RTC low battery check (LOWBATT. CHECK)



- OFF Disabled
- ON Enabled

RTC data renewal timing (RENEWAL)



- BATCH Per batch
- PAGE Per page

NOTES:

- Be sure to load the battery whenever the RTC data is used.
- If the battery is not loaded or the battery voltage is low, the RTC data is erased at the power off time.
- When the low battery check function is set to ON, the printer stops at the power on time due to a “LOW BATTERY” error if the battery voltage is 1.9V or less. As a restart is invalidated in this case, hold down the [RESTART] key to cause the printer to enter <1>RESET mode, access the Real Time Clock setting mode, and set the low battery function to OFF.
- The factory setting for the low battery check function is OFF.
- To enable the real time clock function, set the low battery check to ON.
- When the low battery check is set to OFF, the RTC function is available even in a low battery state. However, the setting and check of the real time clock is required whenever the power is turned on.
- When the RTC data renewal timing is set to “PAGE”, the printer stops between labels ignoring the on-the-fly issue even when an Issue command is sent to print more than one label.

5.15 LCD MESSAGES AND LED INDICATIONS

The model and a firmware version are displayed on the lower line of the LCD.

No.	LCD Messages on Upper line (English)	LED Indication			Printer Status	Recoverable by the [RESTART] key Yes/No	Acceptance of Status Request and Reset Commands Yes/No
		POWER	ON LINE	ERROR			
1	**ON LINE**	○	○	●	Online mode	-	Yes
	ON LINE	○	⊙	●	Online mode (Communicating)	-	Yes
2	**HEAD OPEN**	○	●	●	The head was opened in online mode.	-	Yes
3	**PAUSE ******	○	●	●	Pause state	Yes	Yes
4	**COMMS ERROR**	○	●	○	A parity error or a framing error occurred during communication by RS-232C.	Yes	Yes
5	**PAPER JAM ******	○	●	○	A paper jam occurred during paper feed.	Yes	Yes
6	**CUTTER ERROR********	○	●	○	An abnormal condition occurred at the cutter.	Yes	Yes
7	**NO PAPER ******	○	●	○	The label has run out.	Yes	Yes
8	**NO RIBBON ******	○	●	○	The ribbon has run out.	Yes	Yes
9	**HEAD OPEN ******	○	●	○	A feed or an issue was attempted with the head opened. (except when the [FEED] key is pressed or in expansion I/O operation mode)	Yes	Yes
10	**HEAD ERROR**	○	●	○	A broken dot error occurred in the thermal head.	Yes	Yes
11	**EXCESS HEAD TEMP**	○	●	○	The thermal head temperature is excessively high.	No	Yes
12	**RIBBON ERROR********	○	●	○	An abnormal condition occurred in the sensor used for determining a torque for the ribbon motor.	Yes	Yes
13	**LOW BATTERY**	○	●	○	The voltage of the battery connected to the real time clock is approximately 1.9 V or less.	No	Yes
14	**SAVING #### &&&&**	○	○	●	In writable character or PC command save mode	-	Yes
15	**FLASH WRITE ERR.**	○	●	○	An error occurred in writing data into memory for storage (flash ROM on the CPU board).	No	Yes
16	**FORMAT ERROR**	○	●	○	An error occurred in formatting memory for storage (flash ROM on the CPU board).	No	Yes
17	**FLASH CARD FULL**	○	●	○	Saving failed because of an insufficient capacity of memory for storage (flash ROM on the CPU board).	No	Yes
18	Display of error command *(See **NOTE 1**.)*	○	●	○	A command error occurred in analyzing a command.	Yes	Yes

No.	LCD Messages on Upper line (English)	LED Indication			Printer Status	Recoverable by the [RESTART] key Yes/No	Acceptance of Status Request and Reset Commands Yes/No
		POWER	ON LINE	ERROR			
19	**POWER FAILURE**	○	●	○	A momentary power interruption occurred.	No	No
20	**INITIALIZING…**	○	●	●	Memory for storage is being initialized. (Initialization is carried out for a maximum of approximately 15 seconds.)	–	–
21	**EEPROM ERROR**	○	●	○	Data cannot be read from/written to a backup EEPROM properly.	No	No
22	**SYSTEM ERROR**	○	●	○	When the following abnormal operations are performed, a system error occurs: (a) Command fetch from an odd address (b) Access to word data at an odd address (c) Access to long-word data at an odd address (d) Access to the area of 80000000H to FFFFFFFFH in the logic space in user mode. (e) An undefined instruction in an area other than a delay slot was decoded. (f) An undefined instruction in a delay slot was decoded. (g) An instruction to rewrite a delay slot was decoded.	No	No
23	**100BASE LAN INITIALIZING…**	○	●	●	The 100BASE LAN is being initialized.	–	–
24	**DHCP CLIENT INITIALIZING…**	○	●	●	The DHCP client is being initialized. * When the DHCP function is enabled.	–	–
25	**IFMIBinit Error**	○	●	●	The printer does not shift to the LAN connection mode. An error occurred while MIB information is expanded. (This is shown for 2 seconds.)	–	–
26	**StartSnmp Error**	○	●	●	An error occurred while SNMP processing is started. (This is shown for 2 seconds.)	–	–
27	**RFID WRITE ERROR**	○	●	○	The printer did not succeed in writing data onto an RFID tag after having retried for a specified times.	Yes	Yes

No.	LCD Messages on Upper line (English)	LED Indication			Printer Status	Recoverable by the [RESTART] key Yes/No	Acceptance of Status Request and Reset Commands Yes/No
		POWER	ON LINE	ERROR			
28	**RFID ERROR**	○	●	○	The printer cannot communicate with an RFID module.	No	Yes
29	**INPUT PASSWORD**	○	●	●	The printer is waiting for a password to be entered.	No	No
30	**PASSWORD INVALID** **Please Power OFF** (This message is displayed on two lines)	○	●	●	Password entered was not correct consecutively for three times.	No	No

NOTE 1: When a command produces an error, 16 bytes of the command code of the erroneous command are displayed on the upper line of the LCD. (However, [LF] and [NUL] are not displayed.)

[Example 1] [ESC] PC001; 0A00, 0300, 2, 2, A, 00, B [LF] [NUL]

Command error

LCD display

```
PC001;0A00,0300,
B-SX8T     V1.0A
```

[Example 2] [ESC] T20 G30 [LF] [NUL]

Command error

LCD display

```
T20G30
B-SX8T     V1.0A
```

[Example 3] [ESC] XR; 0200, 0300, 0450, 1200, 1 [LF] [NUL]

Command error

LCD display

```
XR;0200,0300,045
B-SX8T     V1.0A
```

NOTE 2: When a command error is displayed, "? (3FH)" is displayed for codes other than 20H to 7FH and A0H to DFH.

NOTE 3: ○: ON
⊙: Blinking
●: OFF
****: Number of remaining labels to be printed ␣␣␣␣ to 9999 (in units of 1 label/tag)
####: Remaining memory capacity of PC save area of a flash memory on the CPU: 0 to 3072 (in K bytes)
&&&&: Remaining memory capacity of writable character storage area for a flash memory on the CPU 0 to 3072 (in K bytes)

5.16 LCD MESSAGES IN DIFFERENT LANGUAGES (UPPER LINE ON LCD)

No.	ENGLISH
1	ON LINE
2	HEAD OPEN
3	PAUSE ****
4	COMMS ERROR
5	PAPER JAM ****
6	CUTTER ERROR****
7	NO PAPER ****
8	NO RIBBON ****
9	HEAD OPEN ****
10	HEAD ERROR
11	EXCESS HEAD TEMP
12	RIBBON ERROR****
13	LOW BATTERY
14	SAVING #### &&&&
15	FLASH WRITE ERR.
16	FORMAT ERROR
17	FLASH CARD FULL
18	INITIALIZING...
19	POWER FAILURE
20	EEPROM ERROR
21	SYSTEM ERROR
22	IFMIBinit Error
23	StartSnmp Error
24	RFID WRITE ERROR
25	RFID ERROR
26	INPUT PASSWORD
27	PASSWORD INVALID

No.	GERMAN
1	ON LINE
2	KOPF OFFEN
3	PAUSE ****
4	UEBERTR.-FEHLER
5	PAPIERSTAU ****
6	MESSERFEHL. ****
7	PAPIERENDE ****
8	FARBB.-ENDE ****
9	KOPF OFFEN ****
10	KOPF DEFEKT
11	KOPF UEBERHITZT
12	FB-FEHLER ****
13	LOW BATTERY
14	SP.-MOD #### &&&&
15	FLASH FEHLER
16	FORMATFEHLER
17	FLASH ZU KLEIN
18	INITIALIZING...
19	POWER FAILURE
20	EEPROM ERROR
21	SYSTEM ERROR
22	IFMIBinit Error
23	StartSnmp Error
24	RFID WRITE ERROR
25	RFID ERROR
26	INPUT PASSWORD
27	PASSWORD INVALID

No.	FRENCH
1	PRETE
2	TETE OUVERTE
3	PAUSE ****
4	ERR. COMMUNICAT.
5	PB. PAPIER ****
6	PB. CUTTER ****
7	FIN PAPIER ****
8	FIN RUBAN ****
9	TETE OUVERTE****
10	ERREUR TETE
11	TETE TROP CHAUDE
12	ERREUR RUBAN****
13	LOW BATTERY
14	MEM LIB #### &&&&
15	ERREUR MEM FLASH
16	ERREUR DE FORMAT
17	MEM INSUFFISANTE
18	INITIALIZING...
19	POWER FAILURE
20	EEPROM ERROR
21	SYSTEM ERROR
22	IFMIBinit Error
23	StartSnmp Error
24	RFID WRITE ERROR
25	RFID ERROR
26	INPUT PASSWORD
27	PASSWORD INVALID

No.	DUTCH
1	IN LIJN
2	KOP OPEN
3	PAUZE ****
4	COMM. FOUT
5	PAPIER VAST ****
6	SNIJMES FOUT****
7	PAPIER OP ****
8	LINT OP ****
9	KOP OPEN ****
10	PRINTKOP DEFECT
11	TEMP. FOUT
12	LINT FOUT ****
13	LOW BATTERY
14	MEM #### &&&&
15	FLASH MEM FOUT
16	FORMAAT FOUT
17	GEHEUGEN VOL
18	INITIALIZING...
19	POWER FAILURE
20	EEPROM ERROR
21	SYSTEM ERROR
22	IFMIBinit Error
23	StartSnmp Error
24	RFID WRITE ERROR
25	RFID ERROR
26	INPUT PASSWORD
27	PASSWORD INVALID

No.	SPANISH
1	ON LINE
2	CABEZAL ABIERTO
3	PAUSA ****
4	ERROR COMUNICACI
5	ATASCO PAPEL****
6	ERROR CORTAD****
7	SIN PAPEL ****
8	SIN CINTA ****
9	CABEZA ABIER****
10	ERROR DE CABEZAL
11	TEMP.CABEZA ALTA
12	ERROR CINTA ****
13	LOW BATTERY
14	SALVAR #### &&&&
15	ERROR ESCRITURA
16	ERROR DE FORMATO
17	MEMORIA INSUFICI
18	INITIALIZING...
19	POWER FAILURE
20	EEPROM ERROR
21	SYSTEM ERROR
22	IFMIBinit Error
23	StartSnmp Error
24	RFID WRITE ERROR
25	RFID ERROR
26	INPUT PASSWORD
27	PASSWORD INVALID

No.	JAPANESE
1	
2	
3	
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12	
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23	
24	
25	
26	
27	

* Japanese messages are omitted here.

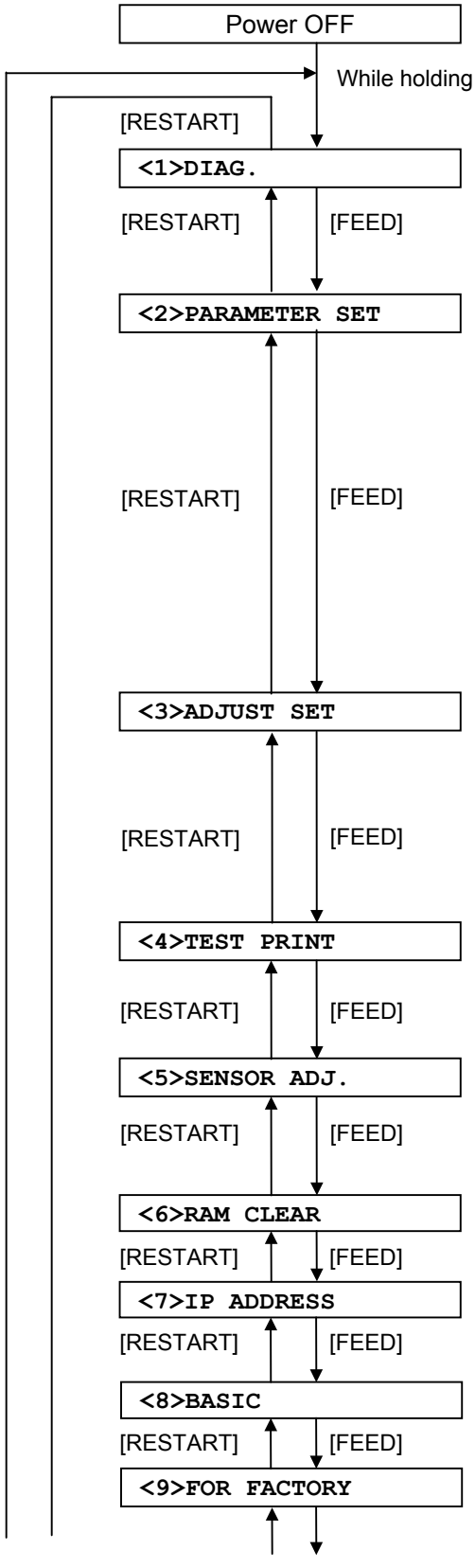
No.	Italian
1	PRONTA
2	TESTA APERTA
3	PAUSA ****
4	ERR. COMUNICAZ.
5	CARTA INCEP.****
6	ERR. TAGL. ****
7	NO CARTA ****
8	NO NASTRO ****
9	TESTA APERTA****
10	ERROR TESTA
11	TEMP. TESTA ALTA
12	ERR. NASTRO ****
13	LOW BATTERY
14	SALVA #### &&&&
15	ERR.SCRITT.CARD
16	ERR. FORMATTAZ.
17	MEM. CARD PIENA
18	INITIALIZING...
19	POWER FAILURE
20	EEPROM ERROR
21	SYSTEM ERROR
22	IFMIBinit Error
23	StartSnmp Error
24	RFID WRITE ERROR
25	RFID ERROR
26	INPUT PASSWORD
27	PASSWORD INVALID

6. SYSTEM MODE

6.1 OUTLINE OF SYSTEM MODE

In this mode, self-test and parameter settings are performed. Described below is the key operation procedure in system mode.

●System mode for service persons and system administrators (All menu items are available.)



Printing of maintenance counter values and various parameter values
Printer self-test operation and printing of results
Thermal head check

Character code, Character zero, RS232C baud rate, RS232C data length, RS232C stop bit length, RS232C parity, RS232C flow control code, LCD language, Auto forward wait, Head up cut in cut issue mode, Ribbon saving function, Control code, Ribbon type, Strip wait status, FEED key function, KANJI code, EURO code, Auto print head check, Centronics ACK/BUSY timing, Web printer function, Media sensor, Input prime, Expansion I/O interface, Plug & Play, Label end/ribbon end, Pre-strip, Reverse feed speed, MaxiCode specification, Strip motor torque, Stabilizer function, System mode password operation setting

Feed fine adjustment, Cut (strip) position fine adjustment, Reverse feed fine adjustment, X-coordinate fine adjustment, Print density fine adjustment (Thermal transfer/Direct thermal print mode), Ribbon motor drive voltage fine adjustment, Reflective sensor manual threshold fine adjustment, Transmissive sensor manual threshold fine adjustment

Test print condition parameters, 1-dot slant line print, 3-dot slant line print, Character print, Bar code print, Non-printing, Assembly process automatic print (Transmissive sensor/Reflective sensor), Line print for assembly process

Thermal head temperature sensor display, Open-air temperature sensor display, Reflective sensor display/adjustment, Transmissive sensor display/adjustments, Sensor status without paper

Maintenance counter clear, Various parameter clear

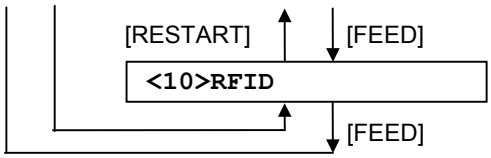
Printer IP address setting, Gateway IP address setting, Subnet mask setting, Socket communication port number setting, DHCP setting, DHCP client ID setting, DHCP host name setting

BASIC setting, BASIC file browser, BASIC trace setting, BASIC expansion mode

Optional check for the process

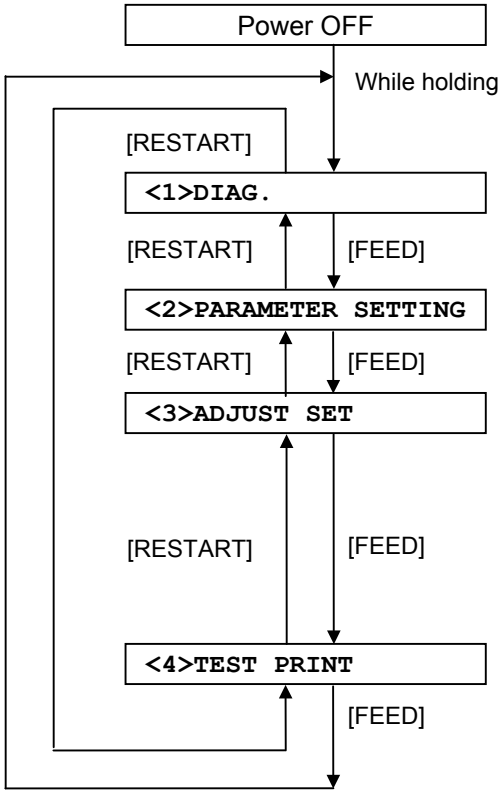
Continued on the following page.

Continued from the previous page.



RFID read test, RFID module type selection, Destination code setting RFID tag type selection, Max. number of RFID issue retries, RFID error tag detection, Max. number of RFID read retries, RFID read retry time-out, Max. number of RFID write retries, RFID write retry time-out, RFID adjustment for retry, RFID wireless power level, AGC threshold setting, Q value, AGC threshold for data write, AGC threshold lower limit for retry, Hibiki tag multi-word write, Password to protect error tag detection, Access password setting, Automatic unlock function setting

●System mode for users (Available menu items are limited.)



Printing of maintenance counter values and various parameter values, Printer self-test operation and printing of results Thermal head broken dots check

Ribbon saving function

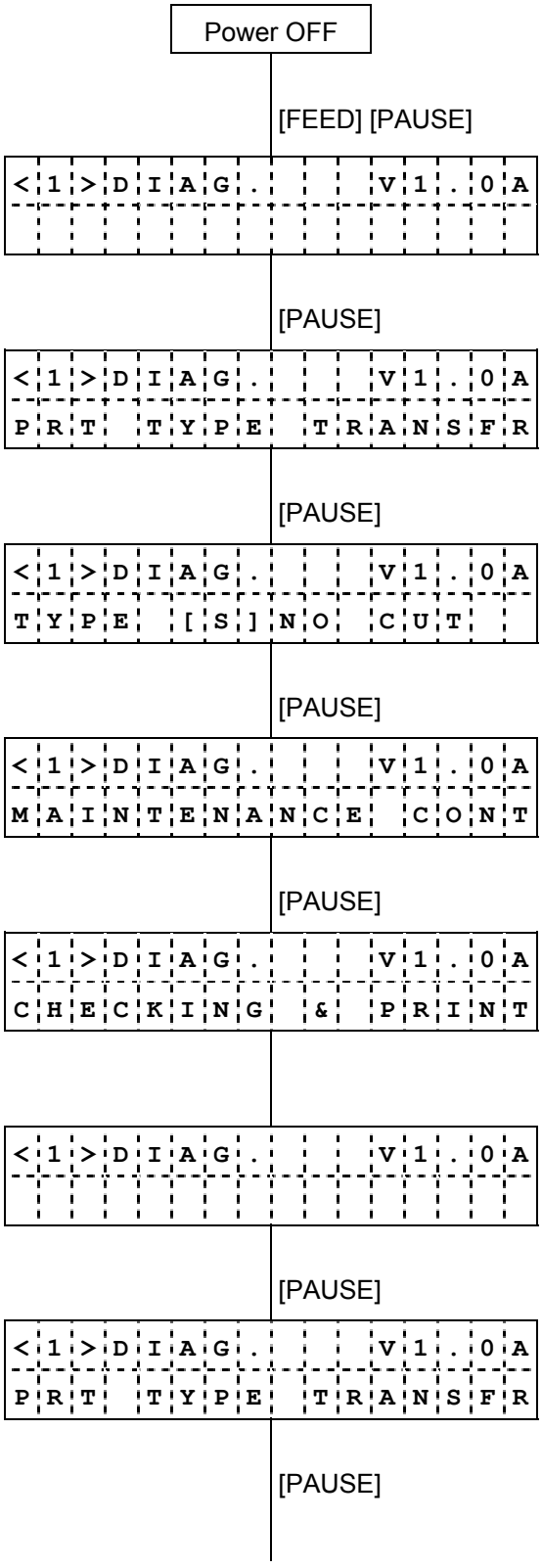
Feed fine adjustment, Cut (strip) position fine adjustment, Reverse feed fine adjustment, X-coordinate fine adjustment, Print density fine adjustment (Thermal transfer/Direct thermal print mode), Ribbon motor drive voltage fine adjustment, Transmissive sensor manual threshold fine adjustment, Reflective sensor manual threshold fine adjustment

Test print condition parameters, 1-dot slant line print, 3-dot slant line print, Character print, Bar code print, Non-printing, Assembly process automatic print (Transmissive sensor/Reflective sensor), Line print for assembly process

6.2 SELF-TEST

6.2.1 Self-test Operation Example

(1) Printing of maintenance counter values, various parameter values, and automatic self-test result



(1) Power off state

(2) While holding the [FEED] and [PAUSE] keys down, turn the power on.

(3) The self-test menu is displayed.

(4) Press the [PAUSE] key.

(5) Print type setting mode

(6) Press the [PAUSE] key.

(7) Issue type setting mode

(8) Press the [PAUSE] key.

(9) Print mode for maintenance counter values and various parameter values

(10) Press the [PAUSE] key.

(11) A check of maintenance counter values and various parameter values starts.

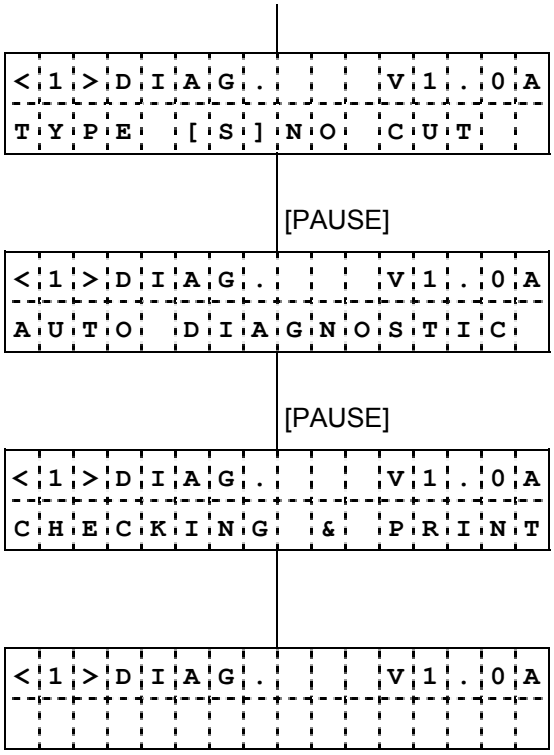
(12) The results are printed out.

(13) The self-test menu is displayed.

(14) Press the [PAUSE] key.

(15) Print type setting mode

(16) Press the [PAUSE] key.



(17) Issue type setting mode

(18) Press the [PAUSE] key.

(19) Automatic self-test mode

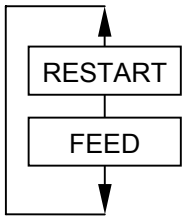
(20) Press the [PAUSE] key.

(21) Start of automatic self-test

(22) The results are printed out.

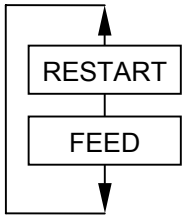
(23) The self-test menu is displayed.

Print type (PRT TYPE)



- TRANSFR (Thermal transfer printing: Transparent ribbon)
- NO TRAN (Thermal transfer printing: Non-transparent ribbon)
- DIRECT (Direct thermal printing)

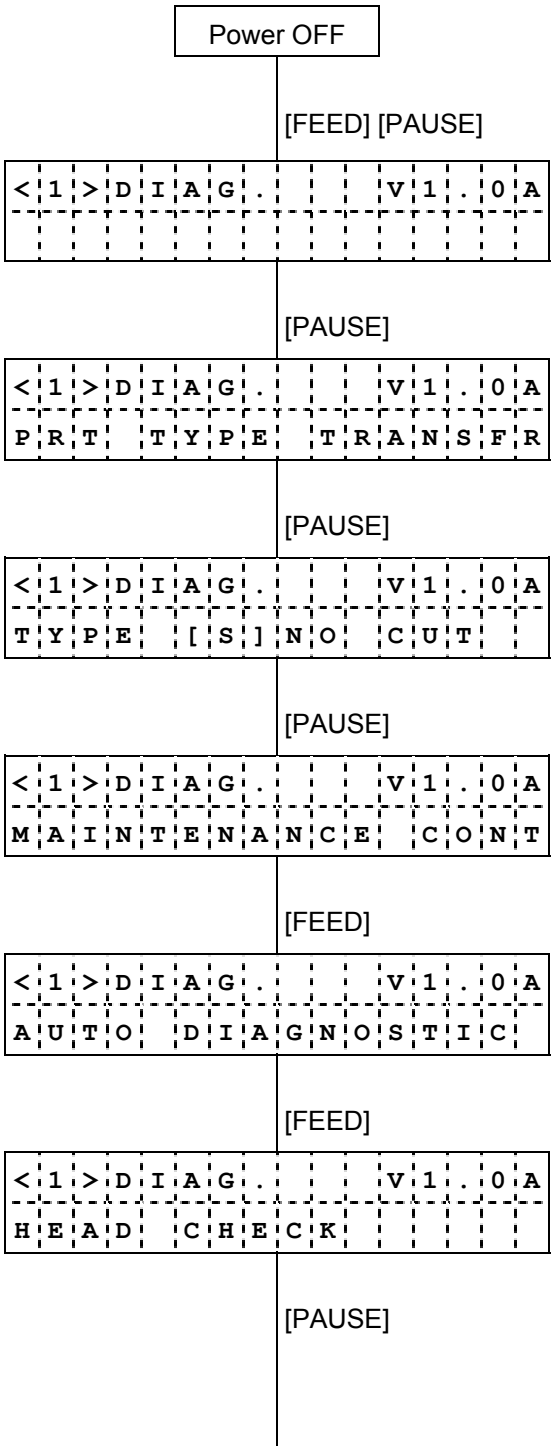
Issue type (TYPE)



- [S]NO CUT (Batch issue)
- [C]WITH CUT (Issue with a cut)

NOTE: *When an error occurs while printing the result of a self-test, an error message is displayed and printing stops. The error is cleared by pressing the [PAUSE] key, then the system mode menu is displayed again. Printing is not automatically resumed after the error is cleared.*

(2) Thermal head check



(1) Power off state

(2) While holding the [FEED] and [PAUSE] keys down, turn the power on.

(3) The self-test menu is displayed.

(4) Press the [PAUSE] key.

(5) Print type setting mode

(6) Press the [PAUSE] key.

(7) Issue type setting mode

(8) Press the [PAUSE] key.

(9) Print mode for maintenance counter values and various parameter values

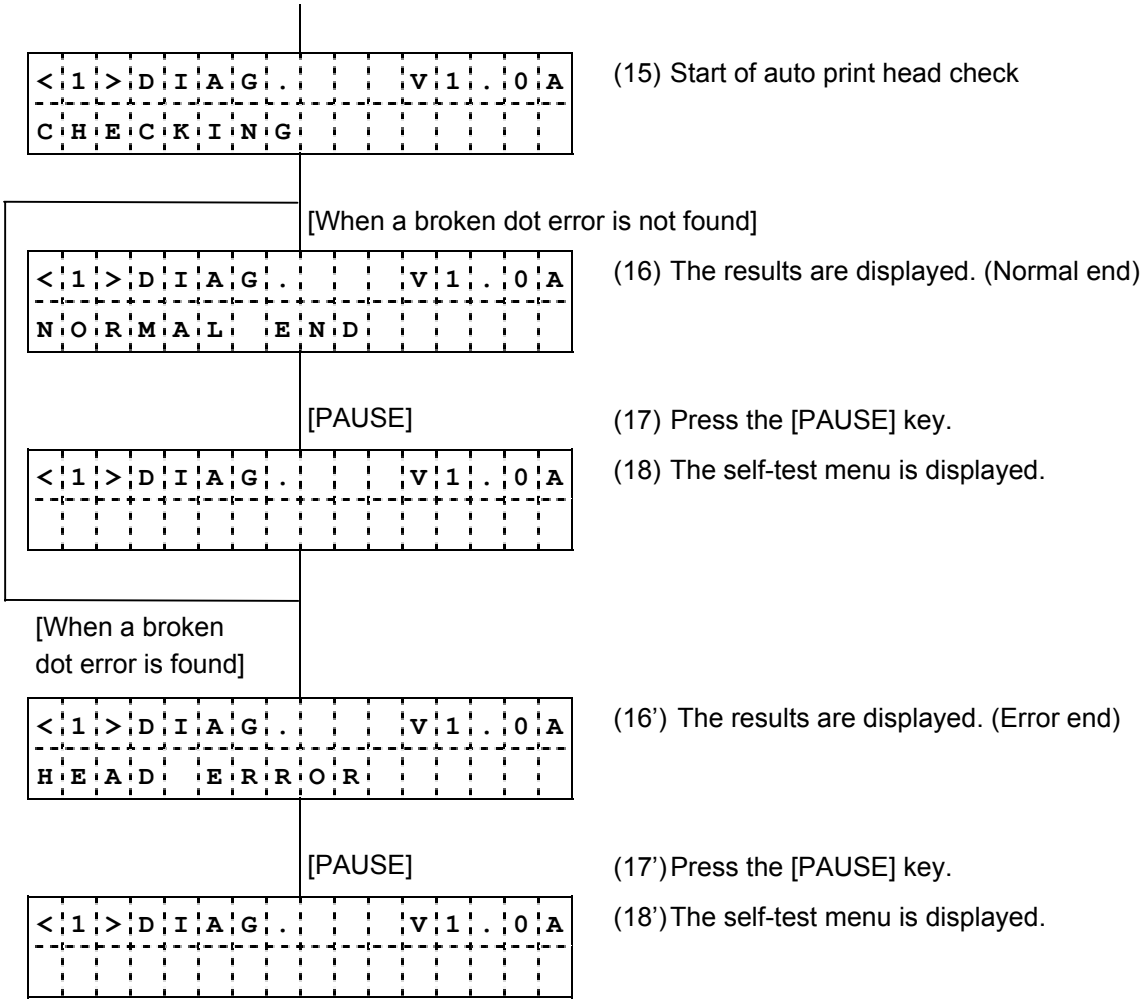
(10) Press the [FEED] key.

(11) Automatic self-test mode

(12) Press the [FEED] key.

(13) Auto print head check mode

(14) Press the [PAUSE] key.


<1>DIAG. V1.0A
CHECKING
(15) Start of auto print head check
[When a broken dot error is not found]
<1>DIAG. V1.0A
NORMAL END
(16) The results are displayed. (Normal end)
[PAUSE]
(17) Press the [PAUSE] key.
<1>DIAG. V1.0A
(18) The self-test menu is displayed.
[When a broken dot error is found]
<1>DIAG. V1.0A
HEAD ERROR
(16') The results are displayed. (Error end)
[PAUSE]
(17') Press the [PAUSE] key.
<1>DIAG. V1.0A
(18') The self-test menu is displayed.

6.2.2 Self-test Items

(1) Printing of maintenance counter values and various parameter values

① Maintenance counter values

- Total label distance covered (cannot be cleared)
- Label distance covered
- Print distance
- Cut count
- Head up and down cycle count
- Ribbon motor drive time
- Solenoid drive time for head up
- RS-232C hardware error count
- System error count
- Momentary power interruption count

② Various parameter values

[Value programmed on the PC]

- Feed fine adjustment value
- Cut (strip) position fine adjustment value
- Reverse feed fine adjustment value
- Print density fine adjustment value (Thermal transfer print mode)
- Print density fine adjustment value (Direct thermal print mode)
- Ribbon motor drive voltage fine adjustment (Take-up)
- Ribbon motor drive voltage fine adjustment (Feed)

[Value programmed using the keys]

- Feed fine adjustment value
- Cut (strip) position fine adjustment value
- Reverse feed fine adjustment value
- Print density fine adjustment value (Thermal transfer print mode)
- Print density fine adjustment value (Direct thermal print mode)
- Ribbon motor drive voltage fine adjustment (Take-up)
- Ribbon motor drive voltage fine adjustment (Feed)
- X-coordinate fine adjustment value
- Reflective sensor manual threshold fine adjustment
- Transmissive sensor manual threshold fine adjustment
- Character code
- Character zero
- RS232C baud rate
- RS232C data length
- RS232C stop bit length
- RS232C parity
- RS232C flow control code
- LCD language
- Auto forward wait (ON: A dimensional fine adjustment is available.)
- Head up cut in cut issue mode
- Ribbon saving function
- Control code
- Ribbon type
- Strip wait status
- FEED key function
- KANJI code
- EURO code
- Auto print head check
- Centronics ACK/BUSY timing
- Web printer function

- Media sensor
- Input prime
- Expansion I/O interface
- Plug & Play
- Label end/ribbon end
- Pre-strip (ON: A dimensional fine adjustment is available.)
- Reverse feed speed
- MaxiCode specification
- Strip motor torque
- Stabilizer function
- Automatic calibration
- LAN enable/disable (When LAN is enabled, SNMP ON/OFF must be set.)
- IP address
- MAC address
- BASIC
- Socket communication port number
- BASIC interpreter
- DHCP
- RTC low battery check
- RTC data renewal timing
- RFID module type selection
- RFID tag type selection
- RFID destination code setting
- RFID error tag detection
- Password to protect error tag detection
- Automatic unlock function setting
- Max. number of RFID issue retries
- Max. number of RFID read retries
- RFID read retry time-out
- Max. number of RFID write retries
- RFID write retry time-out
- RFID adjustment for retry
- RFID wireless power level setting
- RFID AGC threshold setting
- Number of times tag data write succeeded
- Number of times tag data write failed
- Q value
- AGC threshold for data write
- AGC threshold lower limit for retry
- Hibiki tag multi-word write
- System mode password operation setting

(2) Automatic self-test

① Memory check

- Program area (Model, creation date, version, checksum)
- Boot area (Model, creation date, version, checksum)
- Font area checksum
- Bit map Kanji ROM checksum (Gothic, Mincho, Chinese Kanji)
- EEPROM check
- RAM check

② Sensor check

- Strip sensor
- Thermal head open sensor
- Cutter home position sensor
- Ribbon take-up motor sensor
- Ribbon feed motor sensor
- Thermal head temperature sensor
- Open-air temperature sensor
- Reflective sensor
- Transmissive sensor
- No paper level
- Manual threshold level

③ Thermal head check

- Thermal head resistance rank
- Resolution

④ Expansion I/O loop back check

⑤ Internal serial I/F loop back check

⑥ SIO loop back check

⑦ Strip sensor check

⑧ RFID module check

Print Samples of Self-test Result

(1) Maintenance counter values and various parameter values

```
TOTAL FEED      1.1km                   [QM]
FEED            1.1km
PRINT           0.5km
CUT             96
HEAD U/D        12320
RIBBON          3h
SOLENOID        2h
232C ERR        255
SYSTEM ERR      0
POWER FAIL      0
[PC]                            [KEY]
FEED        +2.0mm              FEED        +0.0mm
CUT         +0.0mm              CUT         +1.0mm
BACK        +0.0mm              BACK        +0.0mm
TONE(T)     +0step              TONE(T)     +0step
TONE(D)     +0step              TONE(D)     +0step
RBN(FW)     -10                 RBN(FW)     -8
RBN(BK)     +0                  RBN(BK)     +0
X ADJ.      +0.0mm
THRESHOLD(R)    1.0V
THRESHOLD(T)    1.4V
FONT                [PC-850]    [0]
SPEED               [9600]
DATA LENG.          [8]
STOP BIT            [1]
PARITY              [EVEN]
CONTROL             [XON+READY AUTO]
MESSAGE             [ENGLISH]
FORWARD WAIT        [ON] +0.0mm
HEAD UP CUT         [ON]
RIBBON SAVE         [ON:LABEL]
CODE                [AUTO]
RIBBON              [TRANS]
PEEL OFF STATUS     [ON]
FEED KEY            [FEED]
KANJI               [TYPE1]
EURO CODE           [B0]
AUTO HD CHK         [OFF]
ACK/BUSY            [TYPE1]
WEB PRINTER         [OFF]
SENSOR POSITION     [CENTER]
INPUT PRIME         [ON]
EX.I/O MODE         [TYPE1]
PLUG & PLAY         [OFF]
LBL/RBN END         [TYPE1]
PRE PEEL OFF        [ON] +0.0mm
BACK SPEED          [STD]
MAXI CODE SPEC.     [TYPE1]
PEEL OFF TRQ        [R3]
STABILIZER          [ON]
AUTO CALIB.         [OFF]
LAN                 [ON SNMP ON]
PRTR IP ADDRESS     [192.168.010.020]
GATE IP ADDRESS     [000.000.000.000]
SUBNET MASK         [255.255.255.000]
MAC ADDRESS         [00-80-91-34-00-CC]
TTF AREA            [1280KB]
EXT CHR AREA        [ 256KB]
BASIC AREA          [ 128KB]
PC SAVE AREA        [ 128KB]
SOCKET PORT         [OFF] [08000]
BASIC               [OFF]
BASIC TRACE         [OFF]
DHCP                [OFF]
DHCP ID             [FFFFFFFFFFFFFFFFFFFF]
                    [FFFFFFFFFFFF]
DHCP HOST NAME      [                   ]
RTC BATT. CHK       [ON]
RTC RENEWAL         [PAGE]
```

```
RFID MODULE         [U2]
RFID TAG TYPE       [NONE       ]
RFID ERR CHECK      [PASS] [ON] [ON]
RFID RETRY          [   3]
RFID RD CYCLE       [   5] [2.0sec]
RFID WT CYCLE       [   5] [2.0sec]
RFID ADJ RETRY      [+00mm]
RFID POWER LEV      [ 18]
RFID AGC THR.       [0]
RFID Q VAL          [0]
RFID WT AGC         [ 0]
RFID WT AGC MIN     [ 0]
RFID MLT.BLK WT     [OFF]
RFID WT OK TAGS             0
RFID VOID PRINT TAGS        0
SYSTEM PASSWORD     [OFF]
```

NOTE: *Print conditions: Label length of 240 mm, thermal transfer/direct thermal print mode(*1), no sensors used, 4 ips, one-label issue, batch issue*

*(*1) Depends on the print type setting.*

(2) Automatic self-test (B-SX8T)

```
PROGRAM     B-SX8T
   MAIN     15OCT2005   V1.0A:1A00
   BOOT     20SEP2005   V1.0 :8500
FONT        AD00
KANJI       GOTHIC :9F00
            MINCHO:7400
EEPROM      OK
SDRAM       16MB
SENSOR1     00000000,00000111
SENSOR2     [H]23 °C   [A]22°C
            [R]4.2V    [T]2.5V
PE LV.      [R]1.2V    [T]4.3V
M THRE.     [R]5.0V    [T]5.0V
            [RANK]1    305DPI
EXP.I/O     NG
EX.232C     NG
SIO         NG NG
STRIP       NG
RFID        OK   #00SV972   (EU0)
```

NOTES: *1. Print conditions: Label length of 87 mm, thermal transfer/direct thermal print mode(*1), no sensors used, 4 ips, one-label issue, batch issue*

*(*1) Depends on the ribbon setting.*

2. "°" used for "°C" may not be printed correctly, depending on the type of the character code selected.

6.2.2.1 Details of Self-test Result

(1) Maintenance counter values

Item	Description	Range
TOTAL FEED	Total label distance covered (cannot be cleared)	0.0 to 3200.0 km
FEED	Label distance covered	0.0 to 3200.0 km
PRINT	Print distance	0.0 to 200.0 km
CUT	Cut count	0 to 1000000
HEAD U/D	Head up and down cycle count	0 to 2000000
RIBBON	Ribbon motor drive time	0 to 2000 hours
SOLENOID	Solenoid drive time for head up	0 to 1000 hours
232C ERR	RS-232C hardware error count	0 to 255
SYSTEM ERR	System error count	0 to 15
POWER FAIL	Momentary power interruption count	0 to 15
RFID WT OK TAGS	Number of times a tag data write succeeded	0 to 9999999
RFID VOID PRINT TAGS	Number of times a tag data write failed	0 to 9999999

Maintenance Counter	Count Conditions
Total label distance covered Label distance covered	Counts whenever the paper feed motor is driven to feed or print a label. (Also counts during a reverse feed operation.) When the power is turned off, a label distance of up to 50.0 cm may be rounded down and backed up.
Print distance	Counts while printing. (Counting is not performed during a reverse feed operation.) When the power is turned off, a print distance of 5.5 m or less is rounded down and backed up.
Cut count	Every cut operation is counted. When the power is turned off, a cut count of 31 or less is rounded down and backed up.
Head up and down cycle count	Every head up and down cycle by means of the solenoid, used for the ribbon save function, is counted. When the power is turned off, a head up and down cycle count of 31 or less is rounded down and backed up
Ribbon motor drive time	Counts when the ribbon motor is driven to feed or print a label. (Also counts during a reverse feed operation.) When the power is turned off, a drive time of 27 seconds or less is rounded down and backed up.
Solenoid drive time for head up	Counts when the ribbon save function is activated. When the power is turned off, a drive time of 27 seconds or less is rounded down and backed up.
RS-232C hardware error count	Counts when a parity error, overrun error, or framing error occurs. * When data of several bytes is transmitted continuously, counting is performed per byte.
System error count	Counts when a system error occurs.

Maintenance Counter	Count Conditions
Momentary power interruption count	Counts when a momentary power interruption occurs.
Number of times a tag data write succeeded	Counts the number of times a data write succeeded.
Number of times a tag data write failed	Counts the number of times a data write failed.

(2) Various parameters values

Item		Description	Specification
[PC]	**FEED**	Feed fine adjustment	-50.0 mm to +50.0 mm
	CUT	Cut (strip) position fine adjustment	-50.0 mm to +50.0 mm
	BACK	Reverse feed fine adjustment	-9.9 mm to +9.9 mm
	TONE(T)	Print density fine adjustment (Thermal transfer print mode)	-10 to +10 step
	TONE(D)	Print density fine adjustment (Direct thermal print mode)	-10 to +10 step
	RBN(FW)	Ribbon motor drive voltage fine adjustment (Take-up)	-15 to +0 step
	RBN(BK)	Ribbon motor drive voltage fine adjustment (Feed)	-15 to +10 step
[KEY]	**FEED**	Feed fine adjustment	-50.0 mm to +50.0 mm
	CUT	Cut (strip) position fine adjustment	-50.0 mm to +50.0 mm
	BACK	Reverse feed fine adjustment	-9.9 mm to +9.9 mm
	TONE(T)	Print density fine adjustment (Thermal transfer print mode)	-10 to +10 step
	TONE(D)	Print density fine adjustment (Direct thermal print mode)	-10 to +10 step
	RBN(FW)	Ribbon motor drive voltage fine adjustment (Take-up)	-15 to +0 step
	RBN(BK)	Ribbon motor drive voltage fine adjustment (Feed)	-15 to +10 step
X ADJ.		X-coordinate fine adjustment	-99.9 mm to +99.9 mm
THRESHOLD<R>		Reflective sensor manual threshold fine adjustment	0.0 V to 4.0 V
THRESHOLD<T>		Transmissive sensor manual threshold fine adjustment	0.0 V to 4.0 V

Item	Description	Specification
FONT	Character code	PC-850: PC-850 PC-852: PC-852 PC-857: PC-857 PC-8: PC-8 PC-851: PC-851 PC-855: PC-855 PC-866: PC-866 PC-1250: PC-1250 PC-1251: PC-1251 PC-1252: PC-1252 PC-1253: PC-1253 PC-1254: PC-1254 PC-1257: PC-1257 LATIN9: LATIN9 Arabic: Arabic UTF-8: UTF-8
	Character zero	0 : Without slash Ø : With slash
SPEED	RS232C baud rate	2400: 2400 bps 4800: 4800 bps 9600: 9600 bps 19200: 19200 bps 38400: 38400 bps 115200: 115200 bps
DATA LENG.	RS232C data length	7: 7 bits 8: 8 bits
STOP BIT	RS232C stop bit length	1: 1 bit 2: 2 bits
PARITY	RS232C parity	NONE: No parity ODD: ODD parity EVEN: EVEN parity

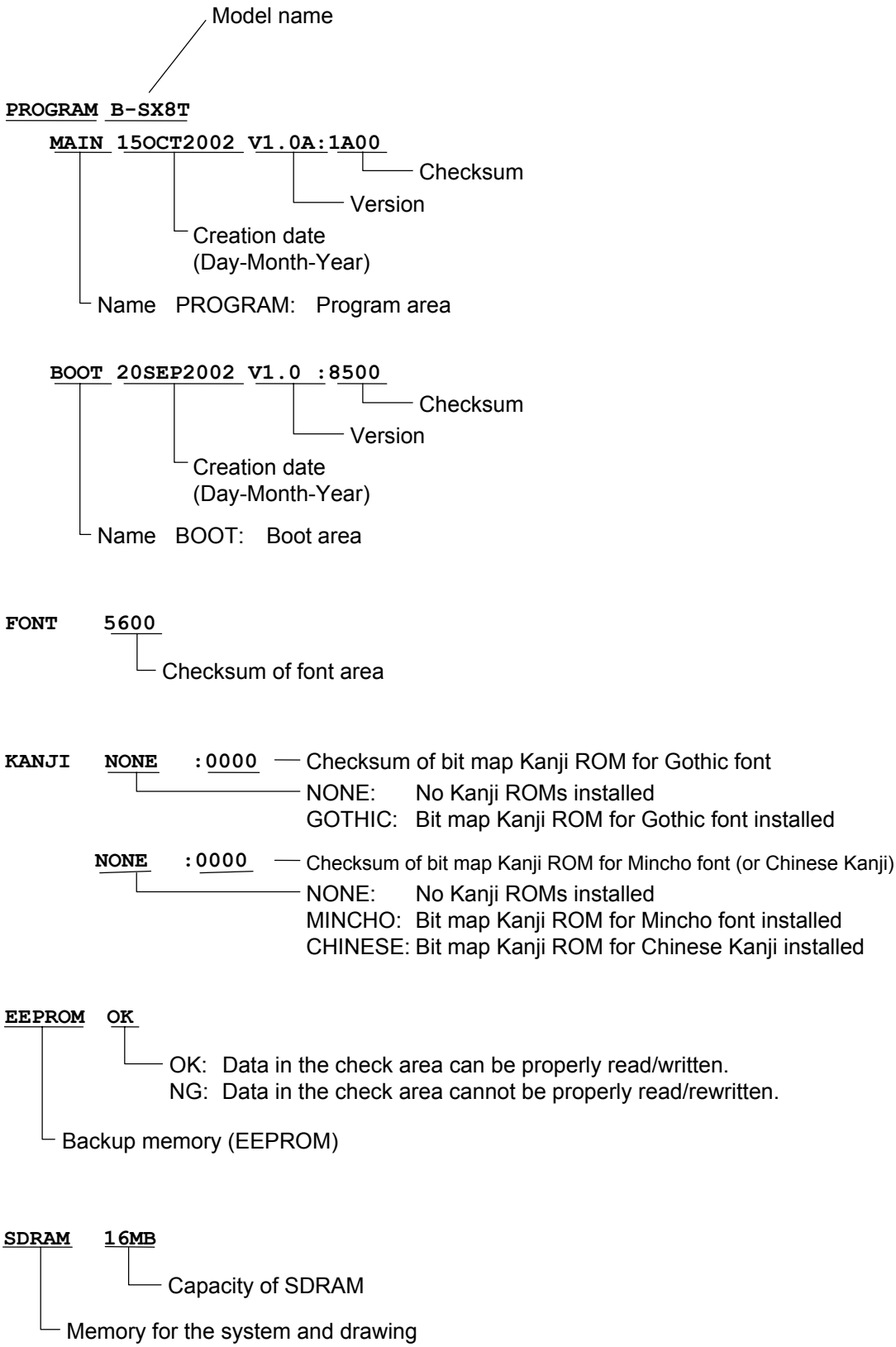
Item	Description	Specification
CONTROL	RS232C flow control code	XON/XOFF: XON/XOFF protocol (No XON output when the power is on, no XOFF output when the power is off) READY/BUSY: READY/BUSY (DTR) protocol (No XON output when the power is on, no XOFF output when the power is off) XON+READY AUTO: XON/XOFF + READY/BUSY (DTR) protocol (XON output when the power is on, XOFF output when the power is off) XON/XOFF AUTO: XON/XOFF protocol (XON output when the power is on, XOFF output when the power is off) READY/BUSY RTS: RTS protocol (No XON output when the power is on, no XOFF output when the power is off)
MESSAGE	LCD language	ENGLISH: English GERMAN: German FRENCH: French DUTCH: Dutch SPANISH: Spanish JAPANESE: Japanese ITALIAN: Italian
FORWARD WAIT	Auto forward wait	ON: Enabled (A fine adjustment value for the stop position is also printed.) OFF: Disabled
HEAD UP CUT	Head up cut in cut issue mode	ON: Activated OFF: Not activated
RIBBON SAVE	Ribbon saving function	ON(TAG): Activated (When the head lever is set to the tag position.) ON(LBL): Activated (When the head lever is set to the label position.) OFF: Not activated
SENS POSI	Media sensor	CENTER: Fixed sensor EDGE: Movable sensor
CODE	Control code	AUTO: Automatic selection ESC LF NUL: ESC LF NUL method { | }: { | } method ××○○△△ Any code set (Described in hex. code)

Item	Description	Specification
RIBBON	Ribbon type selection	TRANS: Transparent ribbon NON TRANS: Non transparent ribbon
PEEL OFF STS	Strip wait status	ON: Enabled OFF: Disabled
FEED KEY	FEED key function	FEED: Feeds one label. PRINT: Prints data in the image buffer on one label.
KANJI	KANJI code	TYPE1: For Windows codes TYPE2: For original codes
EURO CODE	EURO code	20H to FFH
AUTO HD CHK	Auto print head check	ON: An auto print head check is performed when the power is turned on. OFF: An auto print head check is not performed when the power is turned on.
ACK/BUSY	Centronics ACK/BUSY timing	TYPE 1: A rise of ACK signal and a release of BUSY occur at the same time. TYPE 2: A fall of ACK signal and a release of BUSY occur at the same time.
WEB PRINTER	Web printer function	ON: Web printer function is enabled. OFF: Web printer function is disabled.
INPUT PRIME	Input prime	ON: The reset process is performed. OFF: The reset process is not performed.
EX.I/O MODE	Expansion I/O interface	TYPE1: Standard mode TYPE2: In-line mode
PLUG & PLAY	Plug & Play	ON: A plug-and-play operation is performed. OFF: A plug-and-play operation is not performed.
LBL/RBN END	Label end/ribbon end	TYP1: When a label end or ribbon end is detected, the printer stops even if it is printing. TYP2: When a label end or ribbon end is detected, the printer prints the current label as far as possible, then stops.
PRE PEEL OFF	Pre-strip	OFF: A pre-strip operation is not performed.
BACK SPEED	Reverse feed speed	STD: 3 ips LOW: 2 ips
MAXI CODE SPEC.	MaxiCode specification	TYPE1: Compatible with a current version TYPE2: Special specification

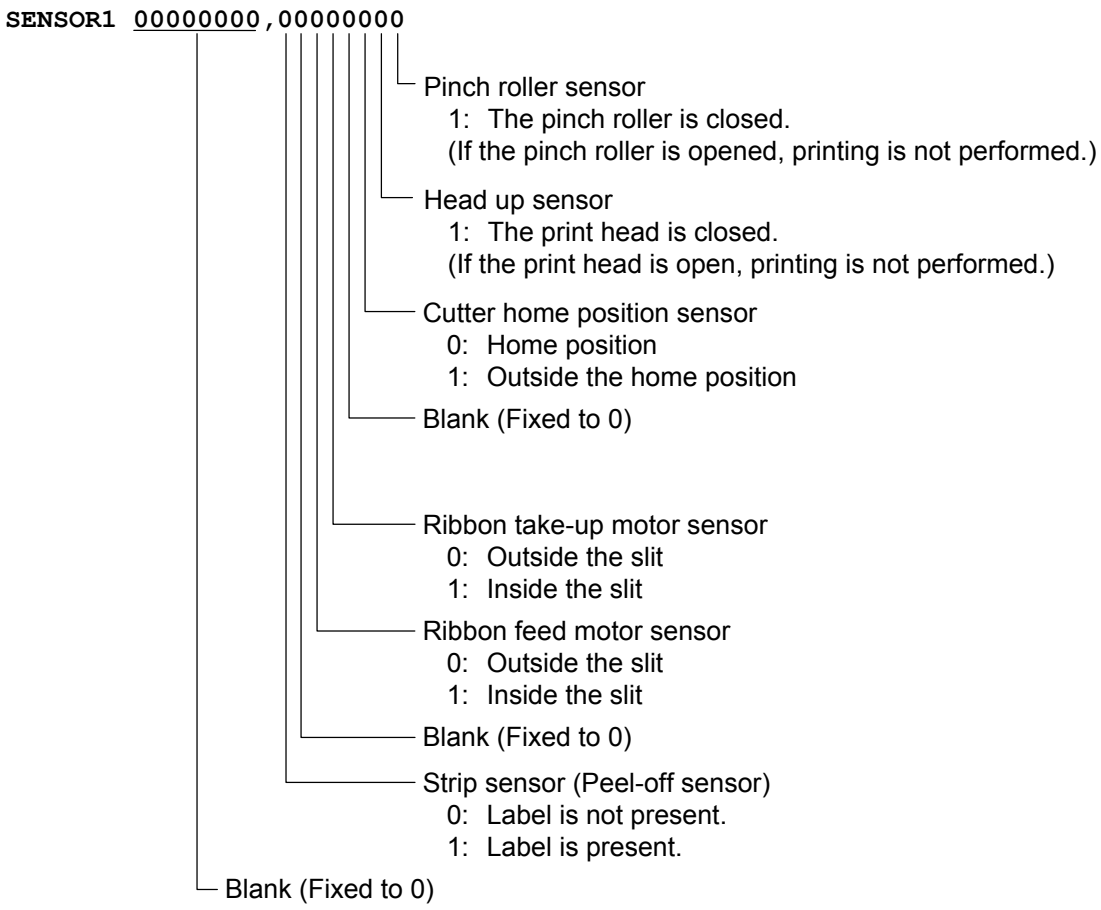
Item	Description	Specification
AUTO CALIB.	Automatic calibration	OFF Disabled ON TRANS: Enabled with the transmissive sensor ON REFLECT: Enabled with the reflective sensor
LAN	LAN enable/disable	ON with SNMP set to ON: LAN enabled, SNMP enabled ON with SNMP set to OFF: LAN enabled, SNMP disabled OFF: LAN disabled
PRTR IP ADDRESS	Printer IP address	***.***.***.***
GATE IP ADDRESS	Gateway IP address	***.***.***.***
SUBNET MASK	Subnet mask	***.***.***.***
MAC ADDRESS	MAC address	**-**-**-**-**-**
TTF AREA	TrueType font storage area size	0 KB to 3072 KB (in units of 128 KB)
EXT CHR AREA	Writable character storage area size	0 KB to 3072 KB (in units of 128 KB)
BASIC AREA	BASIC file storage area size	0 KB to 1792 KB (in units of 128 KB)
PC SAVE AREA	PC saving area size	0 KB to 3072 KB (in units of 128 KB)
SOCKET PORT	Socket communication port number	ON: Socket communication function is enabled. OFF: Socket communication function is disabled. Port number: 0 to 65535
BASIC	BASIC interpreter	ON: BASIC interpreter function is enabled. OFF: BASIC interpreter function is disabled.
BASIC TRACE	BASIC interpreter trace	ON: Trace function is enabled. OFF: Trace function is disabled.
DHCP	DHCP	ON: DHCP function is enabled. OFF: DHCP function is disabled.
DHCP ID	DHCP ID	Max. 16 characters
DHCP HOST NAME	DHCP HOST NAME	Max. 16 characters
PEEL OFF TRQ	Strip motor torque	R0: Standard
STABILIZER	Stabilizer function	ON: The stabilizer function is used. OFF: The stabilizer function is not used.
RTC BATT.CHK	RTC low battery check	ON: Enabled OFF: Disabled
RTC RENEWAL	RTC data renewal timing	BATCH: Per batch PAGE: Per page
RFID TAG TYPE	RFID tag type selection	None EPC C1 Gen2: 24
RFID MODULE	RFID module type	NONE: No RFID kit is installed. U2: B-SX708-RFID-U2-∗∗ -R

Item	Description	Specification
RFID ERR CHECK	RFID error tag detection	OFF: An error tag detection is not performed. EPC: RFID error tag detection for EPC area data PASS: RFID error tag detection for access password area data (only when using a Gen2 tag) When PASS is selected, the following settings are subsequently displayed: Password setting to protect error tag detection ON: Enabled OFF: Disabled Automatic unlock function setting ON: Enabled OFF: Disabled
RFID RETRY	Maximum number of RFID issue retries	0 to 255
RFID RD CYCLE	Maximum number of RFID read retries RFID read retry time-out	0 to 255 0 sec. to 9.9 sec.
RFID WT CYCLE	Maximum number of RFID write retries RFID write retry time-out	0 to 255 0 sec. to 9.9 sec.
RFID ADJ RETRY	RFID adjustment for retry	−99 mm to +99mm
RFID POWER LEVEL	RFID wireless power level setting	9 to 18
RFID THRESHOLD	RFID AGC threshold setting	0 to 15
RFID Q VAL	Q value	0 to 5
RFID WT AGC	AGC threshold for data write	0 to 15
RFID WT MIN AGC	AGC threshold lower limit for retry	0 to 15
RFID MULT WRITE	Hibiki tag multi-word write	ON: Enabled OFF: Disabled
SYSTEM PASSWORD	System mode password operation	OFF: Password is not asked to enter the system mode. ON: Password is asked to enter the system mode.

(3) Memory check



(4) Sensor check



SENSOR2 [H]20°C [A]22°C

- [A]22°C: Open-air temperature sensor status (0 to 86 °C, --°C if the temperature cannot be detected)
- [H]20°C: Thermal head temperature sensor status (0 to 86 °C)

[R]4.2V [T]2.5V

- [T]2.5V: Transmissive sensor status (0.0 to 5.0 V)
- [R]4.2V: Reflective sensor status (0.0 to 5.0 V)

PE LV. [R]1.2V [T]4.3V

- [T]4.3V: Transmissive sensor no paper level (0.0 to 5.0 V)
- [R]1.2V: Reflective sensor no paper level (0.0 to 5.0 V)

M THRE. [R]5.0V [T]5.0V

- [T]5.0V: Transmissive sensor manual threshold level (0.0 to 5.0 V)
- [R]5.0V: Reflective sensor manual threshold level (0.0 to 5.0 V)

[RANK]1 305DPI

- 305DPI: Resolution of head installed
- [RANK]1: Thermal head resistance rank

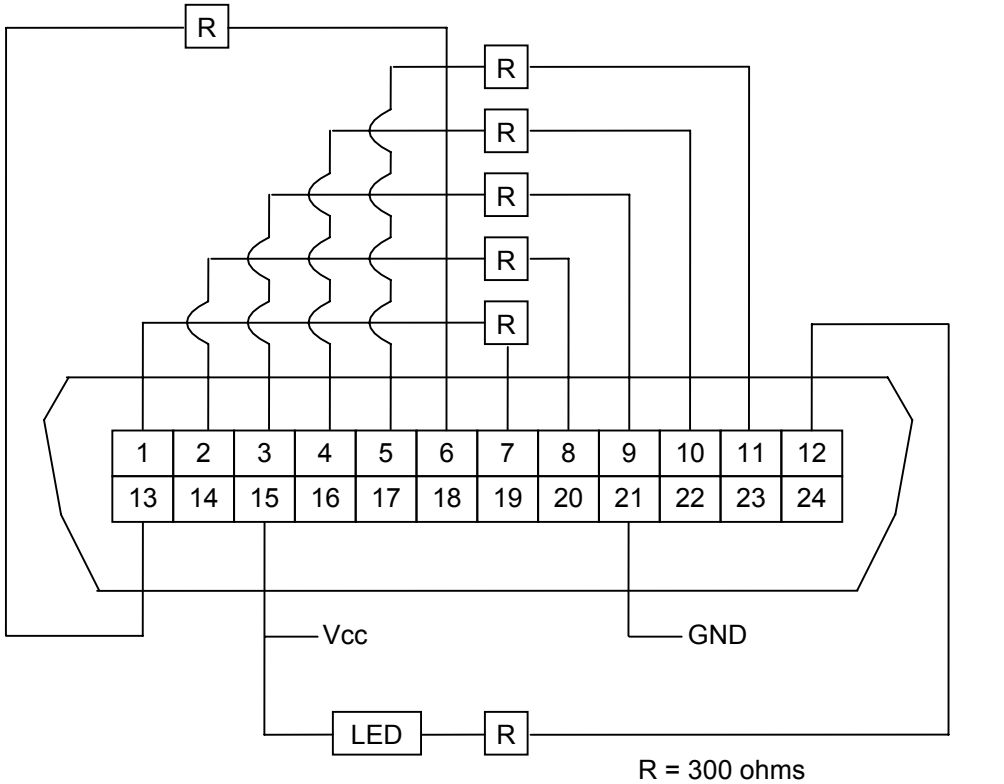
Resistance rank	Average resistance (ohm)	Resistance rank	Average resistance (ohm)
0	1432 to 1454	8	1242 to 1265
1	1409 to 1431	9	1219 to 1241
2	1385 to 1408	10	1195 to 1218
3	1361 to 1384	11	1171 to 1194
4	1337 to 1360	12	1147 to 1170
5	1314 to 1336	13	1124 to 1146
6	1290 to 1313	14	1100 to 1123
7	1266 to 1289	15	1076 to 1099

(5) Expansion I/O check

EXP.I/O NG

- NG: OK: Normal data
  NG: Abnormal data, or the loop-back jig is not connected.
- Expansion I/O

* Connect the cable as illustrated below, then check the following cases: high output/high input, low output/low input.



R = 300 ohms
Connector: FCN-781P024-G/P

(6) Internal serial I/F check

EX.232C NG

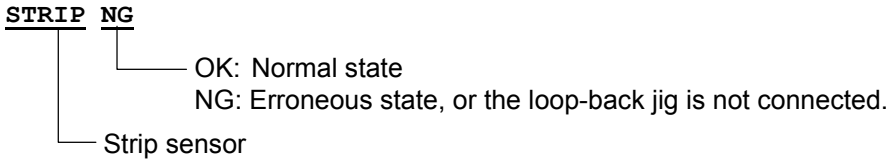
- NG: OK: Normal data
  NG: Abnormal data, or the loop-back jig is not connected.
- Internal serial I/F

(7) SIO I/F check

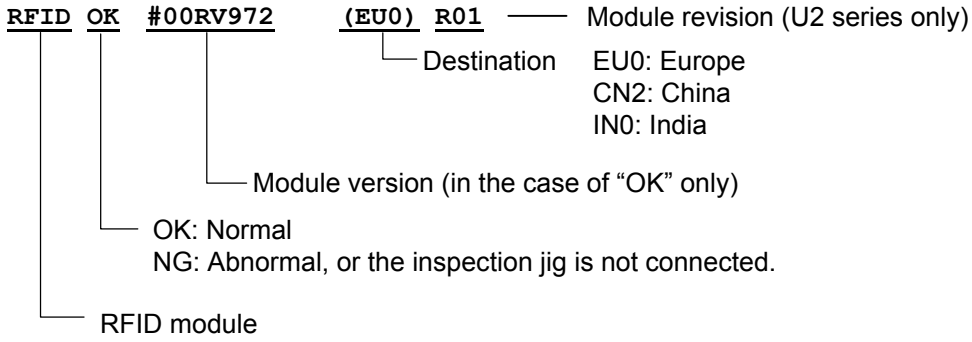
SIO NG NG

- DIN: OK: Normal data
  NG: Abnormal data, or the loop-back jig is not connected.
- DSUB: OK: Normal data
  NG: Abnormal data, or the loop-back jig is not connected.
- SIO I/F

(8) Strip sensor check



(9) RFID module check



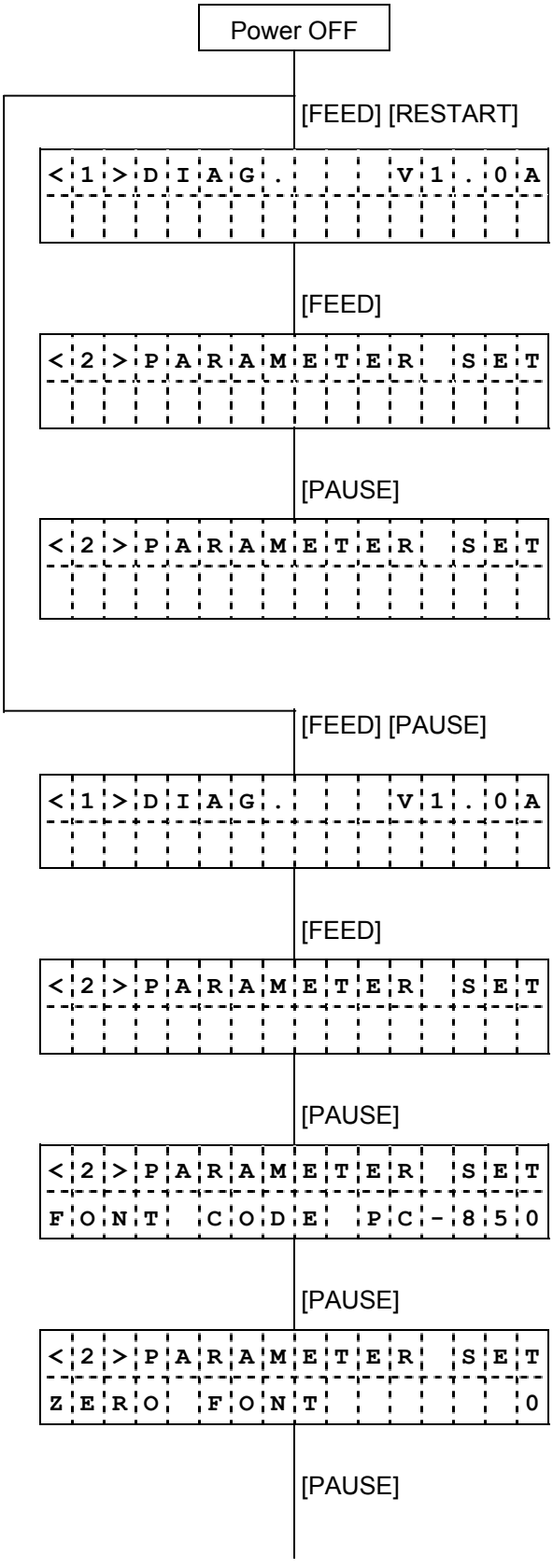
Module version and usable countries

B-SX704-RFID-U2-EU-R

Revision	Country
R00	EU
R11	EU, IN

6.3 VARIOUS PARAMETERS SETTING

6.3.1 Various Parameters Setting Operation Example



(1) Power off state

(2) While holding the [FEED] and [RESTART] keys down, turn the power on.

(3) The self-test menu is displayed.

(4) Press the [FEED] key.

(5) System mode menu display (Parameter setting)

(6) Press the [PAUSE] key.

(7) System mode menu display (Parameter setting)

(2) While holding the [FEED] and [PAUSE] keys down, turn the power on.

(3) The self-test menu is displayed.

(4) Press the [FEED] key.

(5) System mode menu display (Parameter setting)

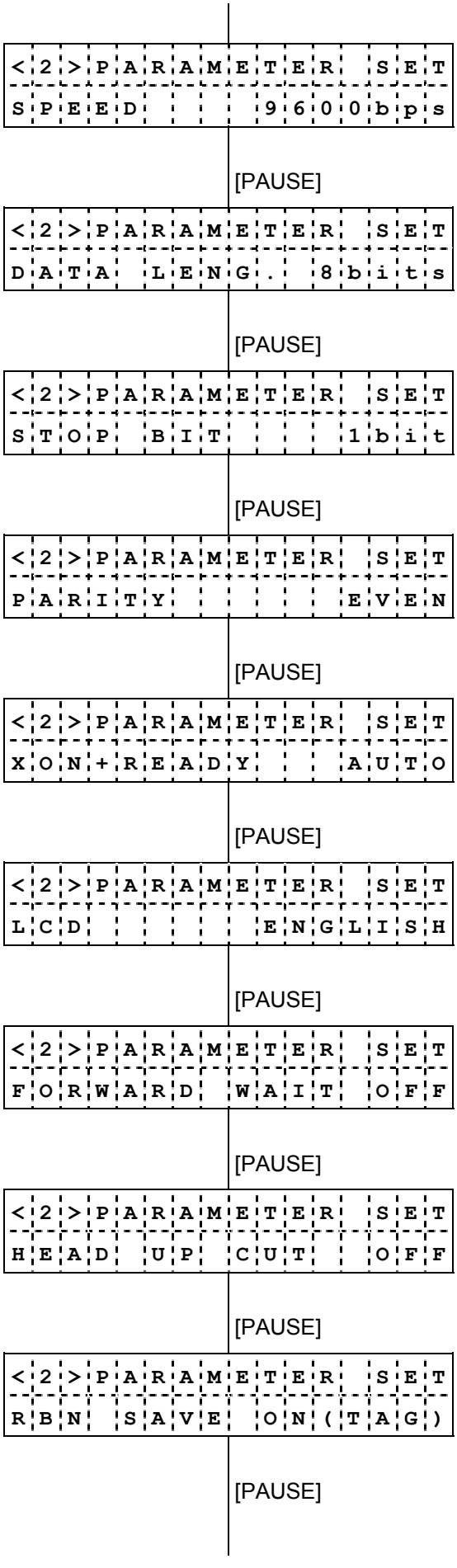
(6) Press the [PAUSE] key.

(7) Font code setting:
Select a font code using the [FEED] and [RESTART] keys.

(8) Press the [PAUSE] key.

(9) Character zero setting:
Select a style of zero (0) using the [FEED] and [RESTART] keys.

(10) Press the [PAUSE] key.



(11) RS232C baud rate setting:
Select a baud rate using the [FEED] and [RESTART]

(12) Press the [PAUSE] key.

(13) RS232C data length setting:
Select a data length using the [FEED] and [RESTART] keys.

(14) Press the [PAUSE] key.

(15) RS232C stop bit length setting:
Select a stop bit length using the [FEED] and [RESTART] keys.

(16) Press the [PAUSE] key.

(17) RS232C parity setting:
Select a parity value using the [FEED] and [RESTART] keys.

(18) Press the [PAUSE] key.

(19) RS232C flow control code setting:
Select a flow control code using the [FEED] and [RESTART] keys.

(20) Press the [PAUSE] key.

(21) LCD language setting:
Select a language for LCD messages using the [FEED] and [RESTART] keys.

(22) Press the [PAUSE] key.

(23) Auto forward wait setting:
Enable/disable the auto forward wait using the [FEED] and [RESTART] keys.

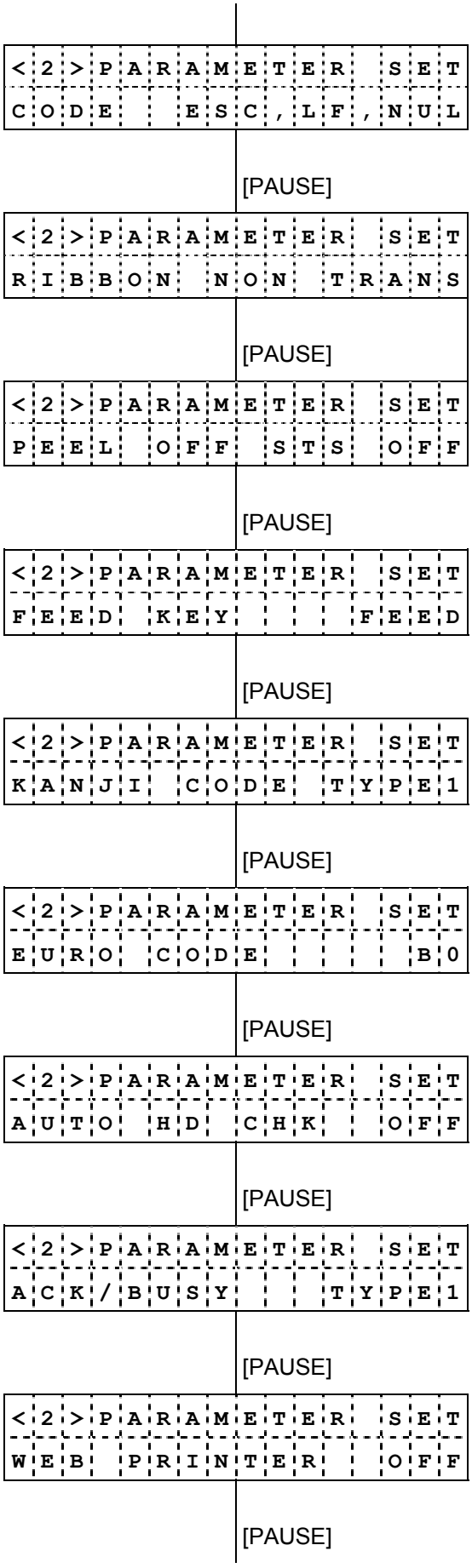
(24) Press the [PAUSE] key.

(25) Head up cut setting in cut issue mode:
Enable/disable the head up cut function using the [FEED] and [RESTART] keys.

(26) Press the [PAUSE] key.

(27) Ribbon saving function setting:
Enable/disable the ribbon saving function using the [FEED] and [RESTART] keys.

(28) Press the [PAUSE] key.



(29) Control code setting:
Select a control code using the [FEED] and [RESTART] keys.

(30) Press the [PAUSE] key.

(31) Ribbon type setting:
Select a ribbon type using the [FEED] and [RESTART] keys.

(32) Press the [PAUSE] key.

(33) Strip wait status setting:
Enable/disable the strip wait status function using the [FEED] and [RESTART] keys.

(34) Press the [PAUSE] key.

(35) FEED key function setting:
Select a function of the [FEED] key using the [FEED] and [RESTART] keys.

(36) Press the [PAUSE] key.

(37) KANJI code setting:
Select a KANJI code using the [FEED] and [RESTART] keys.

(38) Press the [PAUSE] key.

(39) EURO code setting:
Select a EURO code using the [FEED] and [RESTART] keys.

(40) Press the [PAUSE] key.

(41) Auto print head check setting:
Enable/disable the auto print head check using the [FEED] and [RESTART] keys.

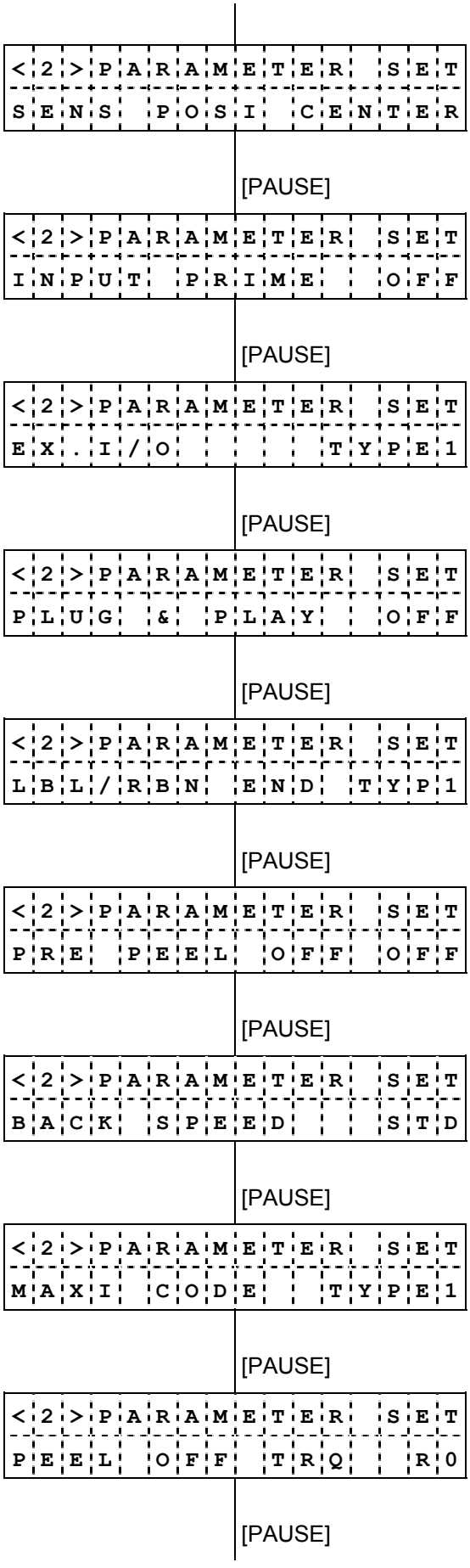
(42) Press the [PAUSE] key.

(43) Centronics ACK/BUSY timing setting:
Select an ACK/BUSY timing using the [FEED] and [RESTART] keys.

(44) Press the [PAUSE] key.

(45) Web printer function setting:
Enable/disable the web printer function using the [FEED] and [RESTART] keys.

(46) Press the [PAUSE] key.



(47) Media sensor setting:
Select a media sensor using the [FEED] and [RESTART] keys.

(48) Press the [PAUSE] key.

(49) Input prime setting:
Enable/disable the reset process function using the [FEED] and [RESTART] keys.

(50) Press the [PAUSE] key.

(51) Expansion I/O interface setting:
Select an operation mode using the [FEED] and [RESTART] keys.

(52) Press the [PAUSE] key.

(53) Plug & Play setting:
Enable/disable the Plug & Play operation using the [FEED] and [RESTART] keys.

(54) Press the [PAUSE] key.

(55) Label end/ribbon end setting:
Select a label end or ribbon end operation using the [FEED] and [RESTART] keys.

(56) Press the [PAUSE] key.

(57) Pre-strip operation setting:

(58) Press the [PAUSE] key.

(59) Reverse feed speed setting:
Select a reverse feed speed using the [FEED] and [RESTART] keys.

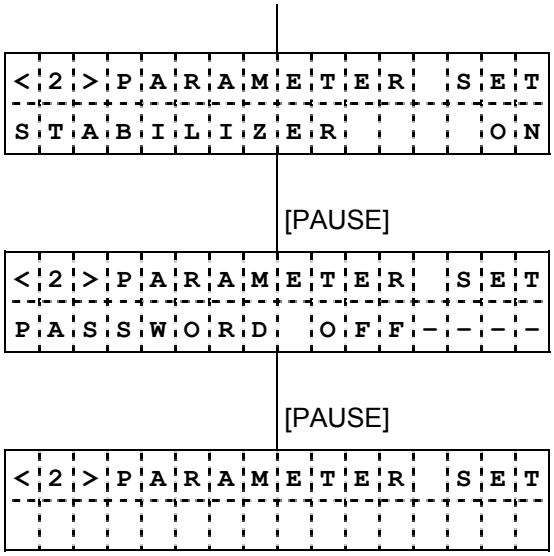
(60) Press the [PAUSE] key.

(61) MaxiCode specification setting:
Select a type of MaxiCode specification using the [FEED] and [RESTART] keys.

(62) Press the [PAUSE] key.

(63) Strip motor torque setting:

(64) Press the [PAUSE] key.



(65) Stabilizer function setting:
Enable/disable the stabilizer function using the [FEED] and [RESTART] keys.

(66) Press the [PAUSE] key.

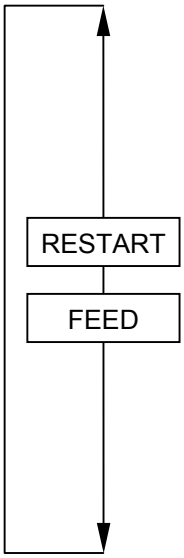
(67) System mode password operation setting:
Select the system mode password operation using the [FEED] and [RESTART] keys.

(68) Press the [PAUSE] key.

(69) The parameter setting menu is displayed.

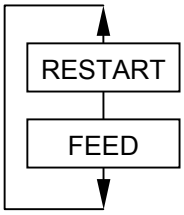
6.3.2 Details of Various Parameter Setting

(1) Character code (FONT CODE)



- PC-8
- PC-857
- PC-852
- PC-850
- Arabic
- LATIN9
- PC-1257
- PC-1254
- PC-1253
- PC-1252
- PC-1251
- PC-1250
- PC-855
- PC-851
- PC-866
- UTF-8

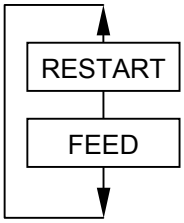
(2) Character zero (ZERO FONT)



- 0 (Without slash)
- Ø (With slash)

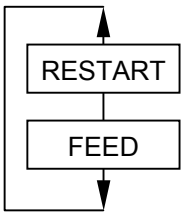
NOTE: *The following fonts do not support a zero with a slash. Therefore, even if a zero with a slash is selected, a zero without a slash is used.*
[Bit map fonts]
OCR-A, OCR-B, GOTHIC725 Black, Kanji, Chinese Kanji
[Outline fonts]
Price fonts 1, 2, and 3, DUTCH801 Bold, BRUSH738 Regular, GOTHIC725 Black, TrueType font

(3) RS-232C baud rate (SPEED)



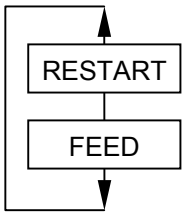
- 115200 bps
- 38400 bps
- 19200 bps
- 9600 bps
- 4800 bps
- 2400 bps

(4) RS-232C data length (DATA LENG.)



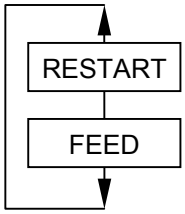
- 8 bits
- 7 bits

(5) RS-232C stop bit length (STOP BIT)



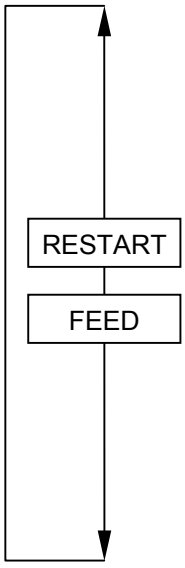
- 2 bits
- 1 bit

(6) RS-232C parity (PARITY)



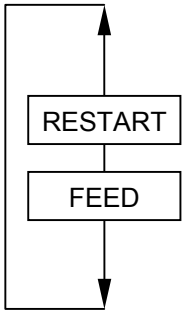
- EVEN
- ODD
- NONE (No parity)

(7) RS-232C flow control code (XON/XOFF, READY/BUSY)



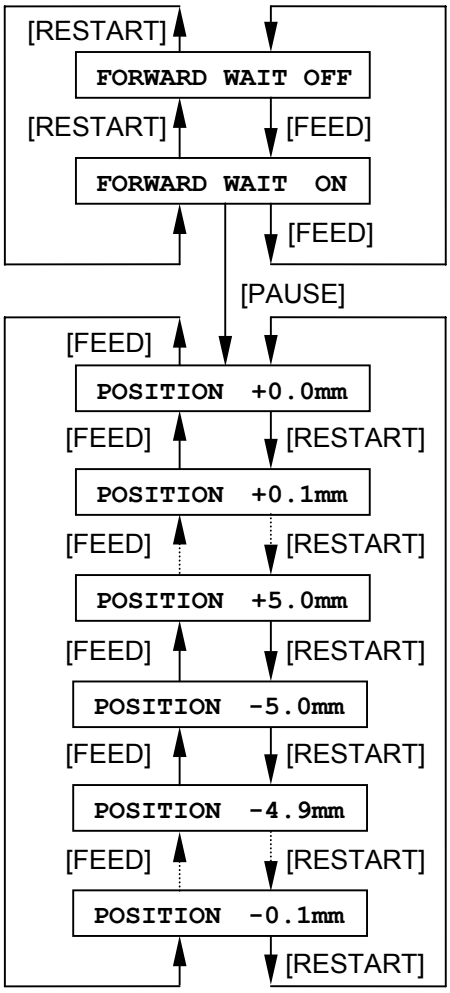
- XON/XOFF AUTO : XON/XOFF protocol
  (XON output when the power is on, XOFF output when the power is off)
- XON + READY AUTO : XON/XOFF + READY/BUSY (DTR) protocol
  (XON output when the power is on, XOFF output when the power is off)
- READY/BUSY : READY/BUSY (DTR) protocol
  (No XON output when the power is on, no XOFF output when the power is off)
- XON/XOFF : XON/XOFF protocol
  (No XON output when the power is on, no XOFF output when the power is off)
- READY/BUSY RTS : RTS protocol
  (No XON output when the power is on, no XOFF output when the power is off)

(8) LCD language (LCD)



- ENGLISH
- ITALIAN
- JAPANESE
- SPANISH
- DUTCH
- FRENCH
- GERMAN

(9) Auto forward wait (FORWARD WAIT)



- OFF: Disabled
- ON: Enabled

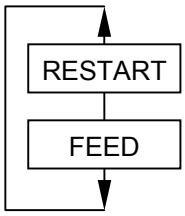
Setting for a fine adjustment value for a stop position after a forward feed standby:

-5.0 mm to +5.0 mm

+: Performs a longer length of a forward feed, then stops.

-: Performs a shorter length of a forward feed, then stops.

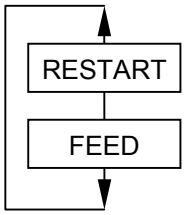
(10) Head up cut in cut issue mode (HEAD UP CUT)



- OFF: Not activated
- ON: Activated

***NOTE**: The print head may not be raised depending on the rise of the solenoid's temperature.*

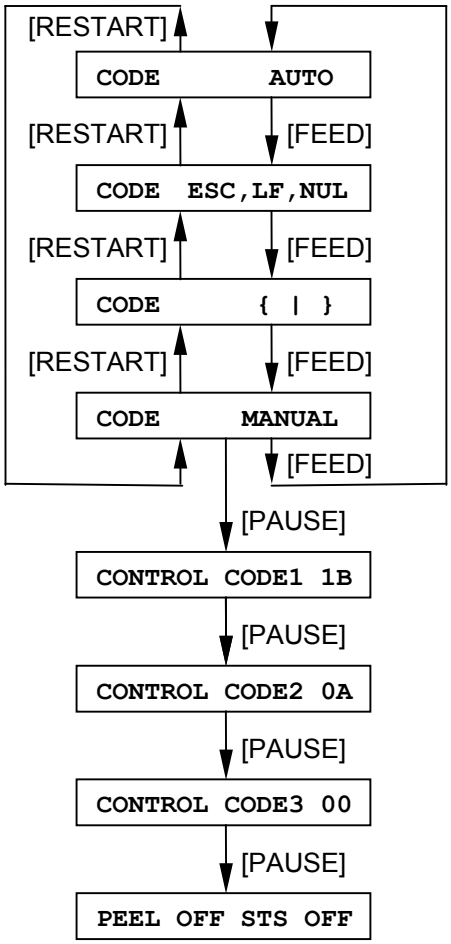
(11) Ribbon saving function (RIBBON SAVE)

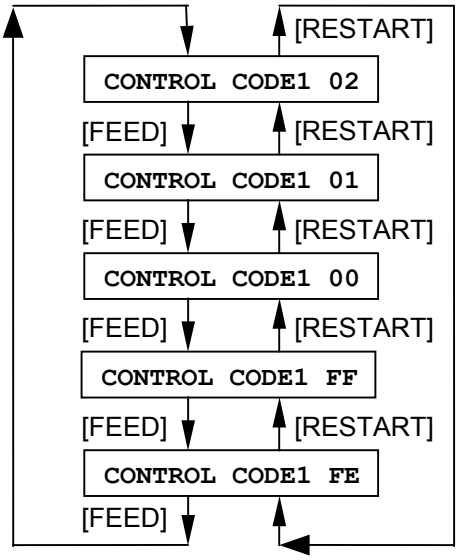


- OFF: Not activated
- ON(LBL): Activated (when the head lever is set to the label position)
- ON(TAG): Activated (when the head lever is set to the tag position)

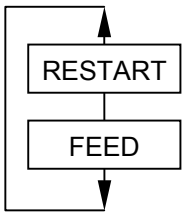
***NOTE**: When a feed or print is performed with this parameter set to ON and without the ribbon saving module installed, the ribbon may sag, which may cause poor printing. The ribbon saving function may not be properly performed if the head lever is actually set to the lock position while this parameter is set to ON.*

(12) Control code (CODE)



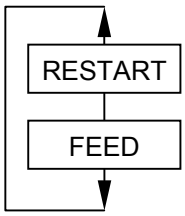


(13) Ribbon type (RIBBON)



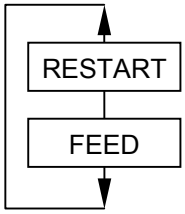
- TRANS: Transparent ribbon
- NON TRANS: Non-transparent ribbon

(14) Strip wait status (PEEL OFF STS)



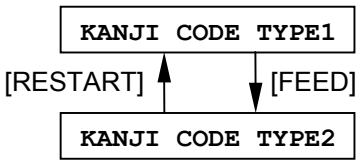
- OFF: Disabled
- ON: Enabled

(15) FEED key function (FEED KEY)



- FEED: Feeds one label.
- PRINT: Prints data in the image buffer on one label.

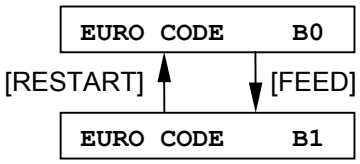
(16) KANJI code (KANJI CODE)



TYPE 1: For Windows codes

TYPE 2: For original codes

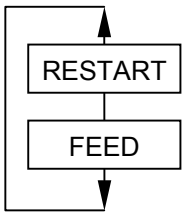
(17) EURO code (EURO CODE)



20H

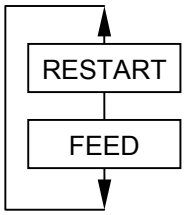
FFH

(18) Auto print head check (AUTO HD CHK)



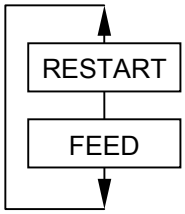
- OFF: An auto print head check is performed when the power is turned on.
- ON: An auto print head check is not performed when the power is turned on.

(19) Centronics ACK/BUSY timing (ACK/BUSY)



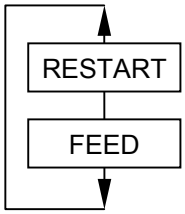
- TYPE 1 A rise of ACK signal and a release of BUSY occur at the same time.
- TYPE 2 A fall of ACK signal and a release of BUSY occur at the same time.

(20) Web printer function (WEB PRINTER)



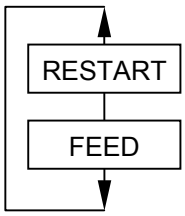
- OFF: Web printer function is disabled.
- ON: Web printer function is enabled.

(21) Media sensor (SENS POSI)



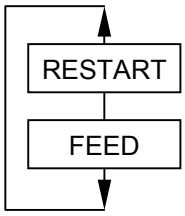
- CENTER: Fixed sensor
- EDGE: Movable sensor

(22) Input prime (INPUT PRIME)



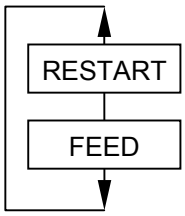
- OFF: The reset process is not performed.
- ON: The reset process is performed.

(23) Expansion I/O interface (EX. I/O)



- TYPE1: Standard mode
- TYPE2: In-line mode

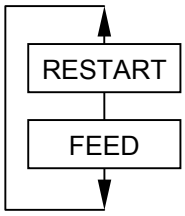
(24) Plug & Play (PLUG & PLAY)



- OFF: A Plug & Play operation is disabled.
- ON: A Plug & Play operation is enabled.

NOTE: *In the USB interface, Plug & Play operations are always enabled, regardless of this setting.*

(25) Label end/ribbon end (LBL/RBN END)



- TYP1: When a label end or ribbon end is detected, the printer stops even if it is printing.
- TYP2: When a label end or ribbon end is detected, the printer prints the current label as far as possible, then stops.

- TYP1: When a label end or a ribbon end is detected in the middle of printing, the printing immediately stops. When the printer is restarted, it feeds a paper first, then resumes the printing from the label at which the error occurred.

- TYP2: [Label end]
  When a label end is detected in the middle of printing, the printer completes printing the current label, then stops operation when the next label is fed to the home position, displaying an error message, "NO PAPER X". (*"X" indicates the number of remaining labels to be printed.)*
  [Number of remaining labels to be printed] = [Total number of labels to be printed] – [Number of printed labels including the label at which the error occurred]
  When a label end is detected while the printer is printing a last label to be printed, "X" in the error message will be blank.
  When the printer is restarted, the printer feeds a paper first, then resumes printing from the label after the one at which the error occurred. When the printer has already completed printing the last label to be printed, it only feeds a paper, then sends an End of Feed status and an End of Issue status, if the status response parameter is set to ON.

  [Ribbon end]
  - When a ribbon end is detected where the remaining label length is 30 mm or more, the printer continues to print for 20 mm and stops, displaying an error message "NO RIBBON X". *("X" indicates the number of remaining labels to be printed.)*
    [Number of remaining labels to be printed] = [Total number of labels to be printed] – [Number of printed labels] -1
    When a ribbon end is detected while the printer is printing a last label to be printed, "X" in the error message will be blank.
    When the printer is restarted, the printer feeds a paper first, then resumes printing from the label after the one at which the error occurred. When the printer has already completed printing the last label to be printed, it only feeds a paper.

• When a ribbon end is detected where the remaining label length is less than 30 mm, the printer completes printing the current label, then stops operation when the next label is fed to the home position, displaying an error message, “NO RIBBON X”. (*“X” indicates the number of remaining labels to be printed.)*
[Number of remaining labels to be printed] = [Total number of labels to be printed] − [Number of printed labels including the label at which the error occurred]
When a ribbon end is detected while the printer is printing a last label to be printed, “X” in the error message will be blank.
When the printer is restarted, the printer feeds a paper first, then resumes printing from the label after the one at which the error occurred. When the printer has already completed printing the last label to be printed, it only feeds a paper, then sends an End of Feed status and an End of Issue status, if the status response parameter is set to ON.

Examples of LBL/RBN END TYP2

[Case 1] Number of total labels to be printed = 5
A label end is detected while the 3rd label is printed.

(1st)(2nd)(3rd)
↑

After issuing the 3rd label completely, the printer stops, displaying “NO PAPER 2”.

When the printer is restarted, the printer feeds a paper, then prints on the 4th and 5th labels. All 5 labels are printed.

[Case 2] Number of total labels to be printed = 5
A ribbon end is detected while the 3rd label is printed.
The remaining label length is 30 mm or more.

(1st)(2nd)(3rd)
↑

After the 3rd label is printed for 20 mm, the printer stops printing, displaying “NO RIBBON 2”.

When the printer is restarted, the printer fees a paper, then prints on the 4th and 5th labels. The 1st, 2nd, 4th, and 5th labels are printed.

[Case 3] Number of total labels to be printed = 5
A ribbon end is detected while the 3rd label is printed.
The remaining label length is less than 30 mm.

(1st)(2nd)(3rd)
↑

After issuing the 3rd label completely, the printer stops, displaying “NO RIBBON 2”.

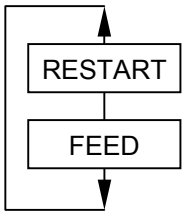
When the printer is restarted, the printer feeds a paper, then prints on the 4th and 5th labels. All 5 labels are printed.

(26) Pre-strip (PRE PEEL OFF)

PRE PEEL OFF OFF

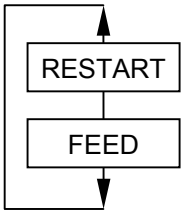
- OFF: The strip wait status function is enabled.

(27) Reverse feed speed (BACK SPEED)



- STD: 3 ips
- LOW: 2 ips

(28) MaxiCode specification (MAXI CODE)



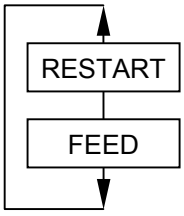
- TYPE1: Compatible with a current version
- TYPE2: Special specification

A mode specified by a command may be different from an actual mode, depending on the status of this parameter. Also, the data transmission method differs partly.
For details, refer to the B-SX6T/8T External Equipment Interface Specification.

(29) Strip motor torque (PEEL OFF TRQ)

- R0: For standard paper

(30) Stabilizer function (STABILIZER)

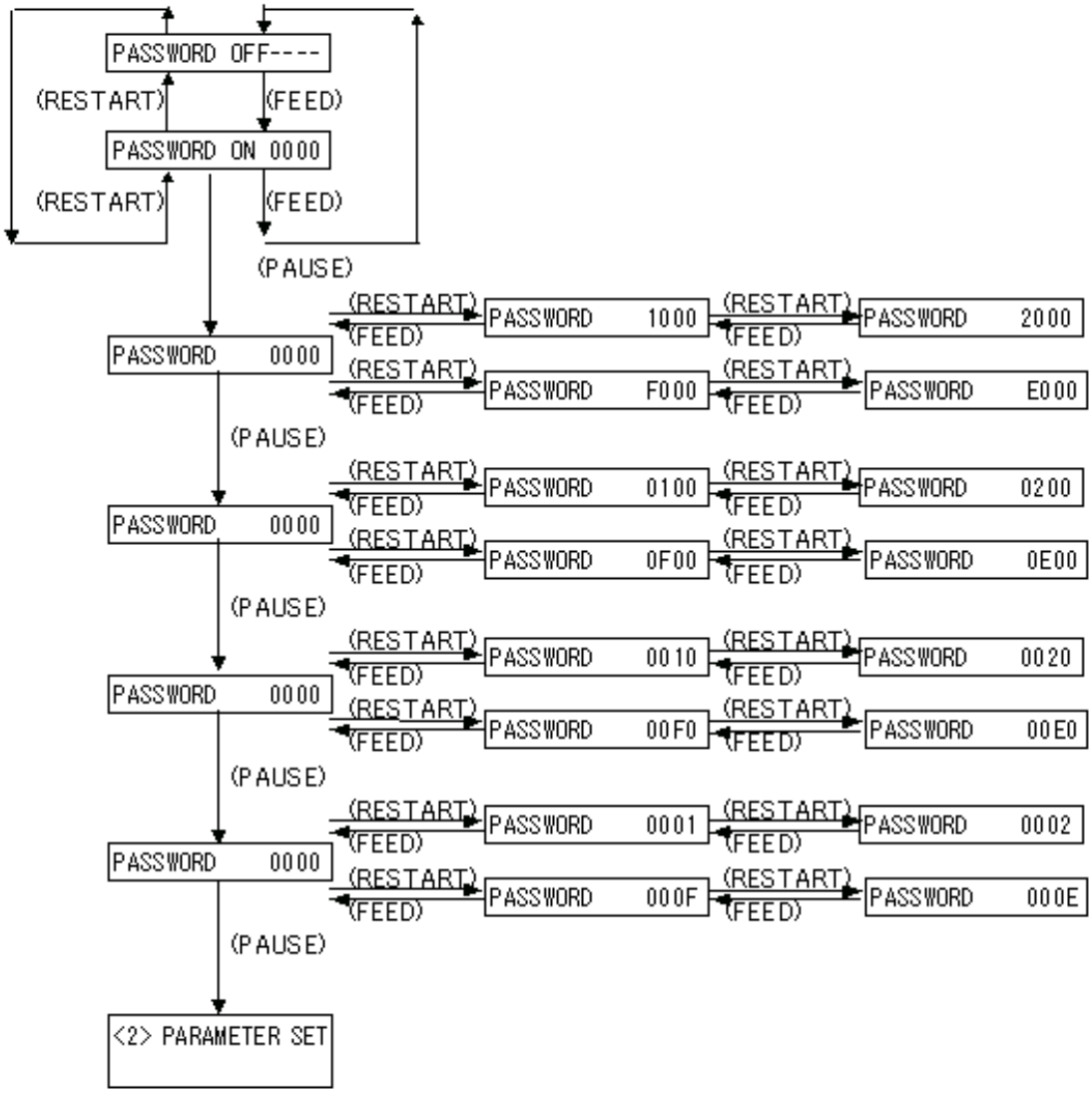


- ON: Enabled only in direct thermal mode and not enabled in transfer thermal mode.
- OFF: Not enabled

Supplementary explanations

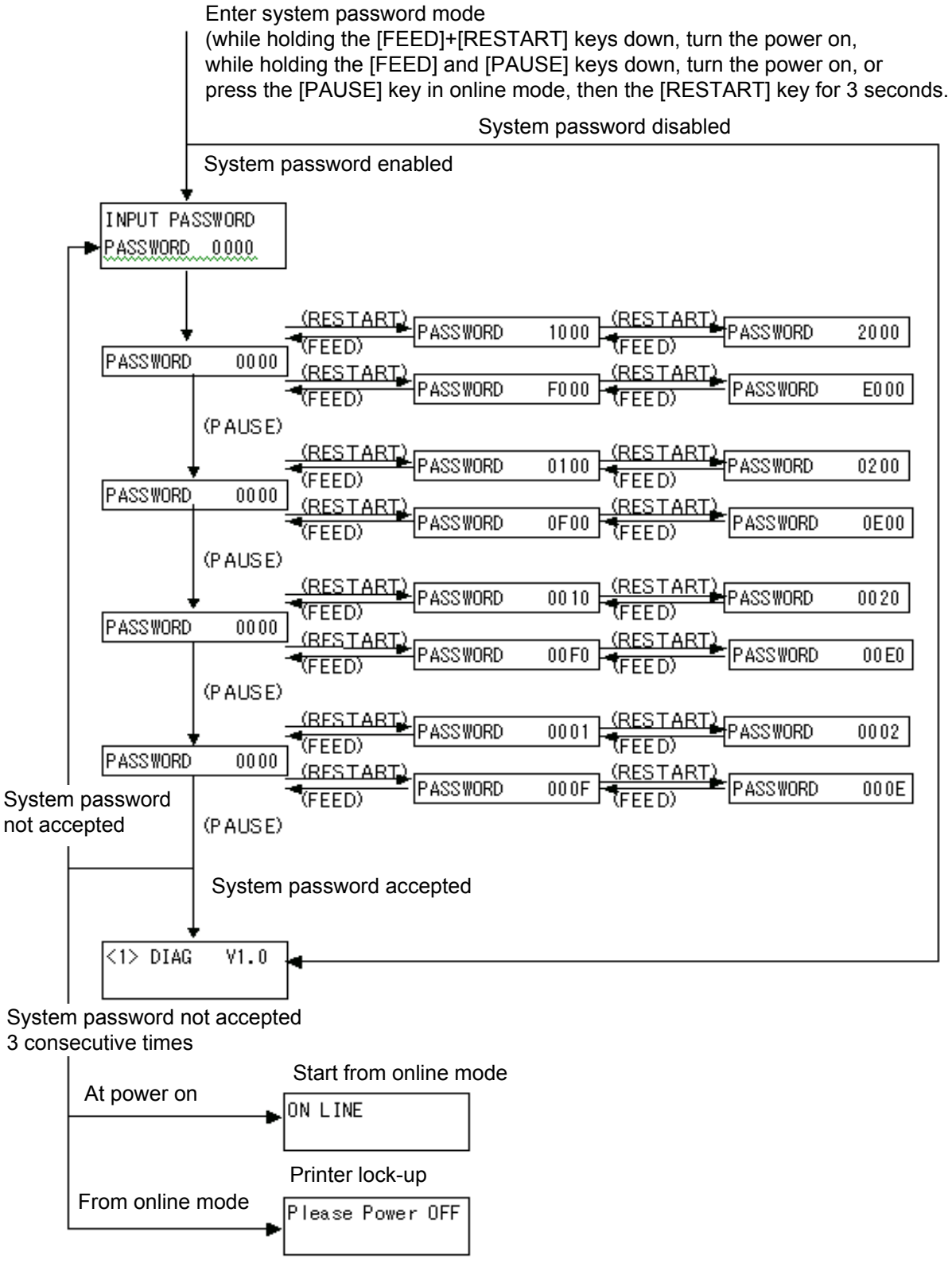
- When the [RESTART] and [FEED] keys are pressed at the same time, the display returns to the System mode menu display.
- If the [RESTART] or [FEED] key is held down for 0.5 seconds or more when a parameter is being set, the printer enters repeat mode, in which the key is entered repeatedly.
- A changed parameter is stored in memory by pressing the [PAUSE] key.

(31) System password setting (PASSWORD)



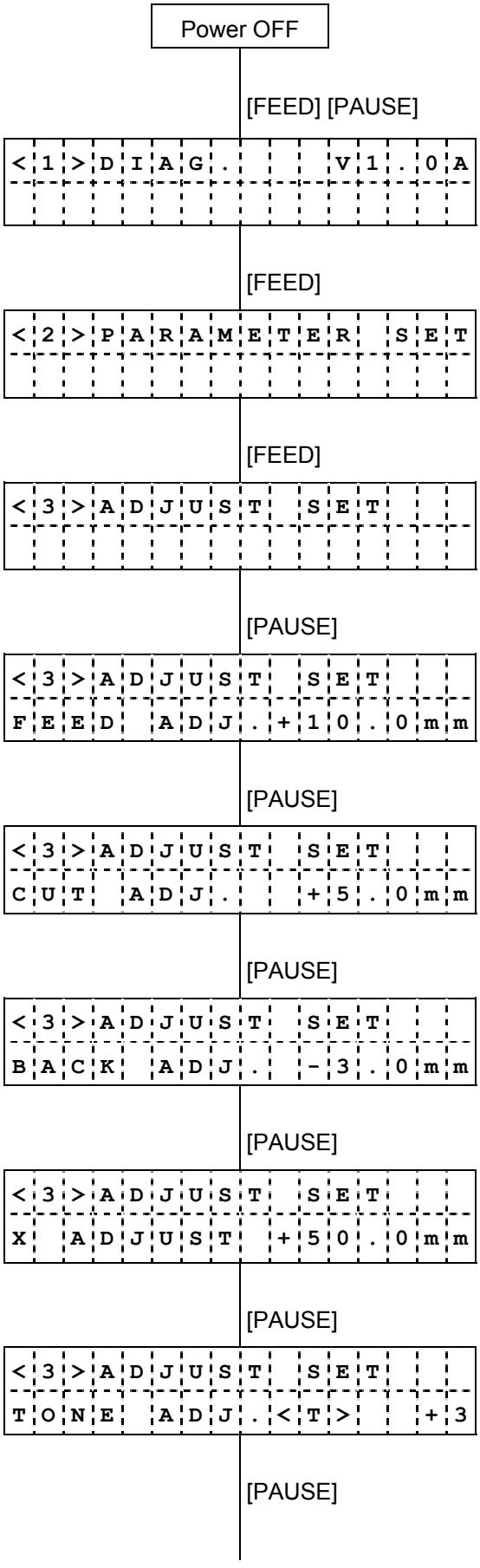
- With the system mode password parameter set to ON, a password entry window appears when either of the following occurs: a) “system mode for service persons and system administrators” is invoked, b) “system mode for users” is invoked, or c) the [PAUSE] and [RESTART] keys are held down for 3 seconds to invoke the system mode.
  When the password, which is the same as that registered here, is entered in the password entry window, the printer starts in system mode.
  As same as when the password is registered, a 4-digit hexadecimal value is entered one by one in the password entry window.
- If a password entry fails three consecutive times when “system mode for service persons and system administrators” or “system mode for users” is invoked with the system mode password parameter set to ON, the printer starts in online mode.
- If a password entry fails three consecutive times when the [PAUSE] and [RESTART] keys are held down for 3 seconds to invoke the system mode, the message “Please Power OFF” appears on the LCD and the printer locks up.
- If the system password is forgotten, disable the system mode password operation using the @010 command. (Hidden command)

• System mode password entry



6.4 FINE ADJUSTMENT VALUE SETTING

6.4.1 Fine Adjustment Value Setting Operation Example



(1) Power off state

(2) While holding the [FEED] and [PAUSE] keys down, turn the power on.

(3) The self-test menu is displayed.

(4) Press the [FEED] key.

(5) System mode menu display
(Parameter setting)

(6) Press the [FEED] key.

(7) System mode menu display
(Fine adjustment value setting)

(8) Press the [PAUSE] key.

(9) Feed fine adjustment:
Set a fine adjustment value using the [FEED] and [RESTART] keys.

(10) Press the [PAUSE] key.

(11) Cut (strip) position fine adjustment:
Set a fine adjustment value using the [FEED] and [RESTART] keys.

(12) Press the [PAUSE] key.

(13) Reverse feed fine adjustment:
Set a fine adjustment value using the [FEED] and [RESTART] keys.

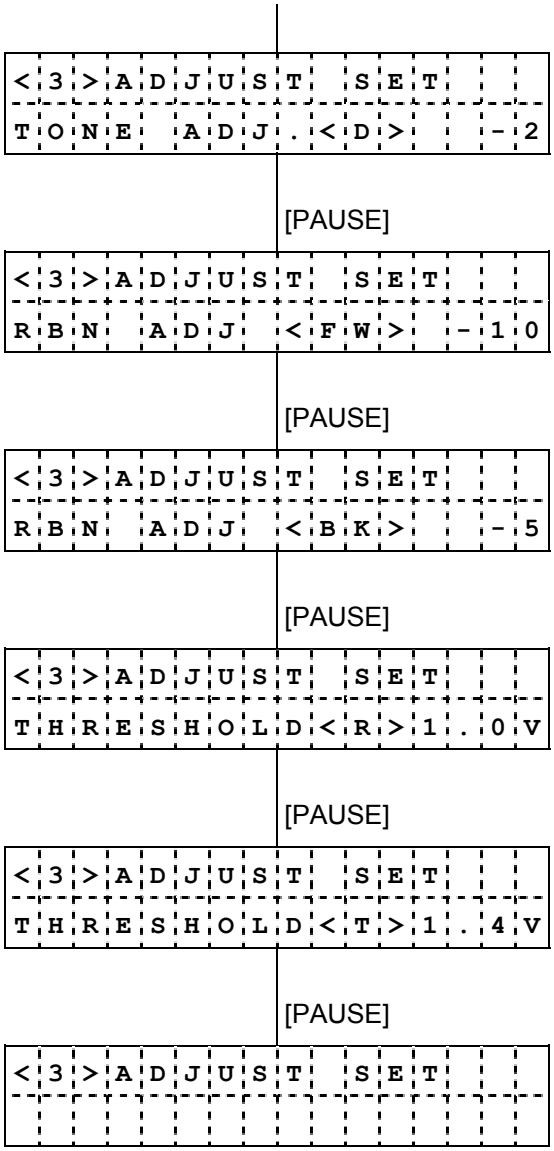
(14) Press the [PAUSE] key.

(15) X-coordinate fine adjustment:
Set a fine adjustment value using the [FEED] and [RESTART] keys.

(16) Press the [PAUSE] key.

(17) Print density fine adjustment
(Thermal transfer print mode):
Set a fine adjustment value using the [FEED] and [RESTART] keys.

(18) Press the [PAUSE] key.



(19) Print density fine adjustment
(Direct thermal print mode):
Set a fine adjustment value using the [FEED] and [RESTART] keys.

(20) Press the [PAUSE] key.

(21) Ribbon motor drive voltage fine adjustment
(Take-up):
Set a fine adjustment value using the [FEED] and [RESTART] keys.

(22) Press the [PAUSE] key.

(23) Ribbon motor drive voltage fine adjustment
(Feed):
Set a fine adjustment value using the [FEED] and [RESTART] keys.

(24) Press the [PAUSE] key.

(25) Reflective sensor manual threshold fine adjustment:
Set a fine adjustment value using the [FEED] and [RESTART] keys.

(26) Press the [PAUSE] key.

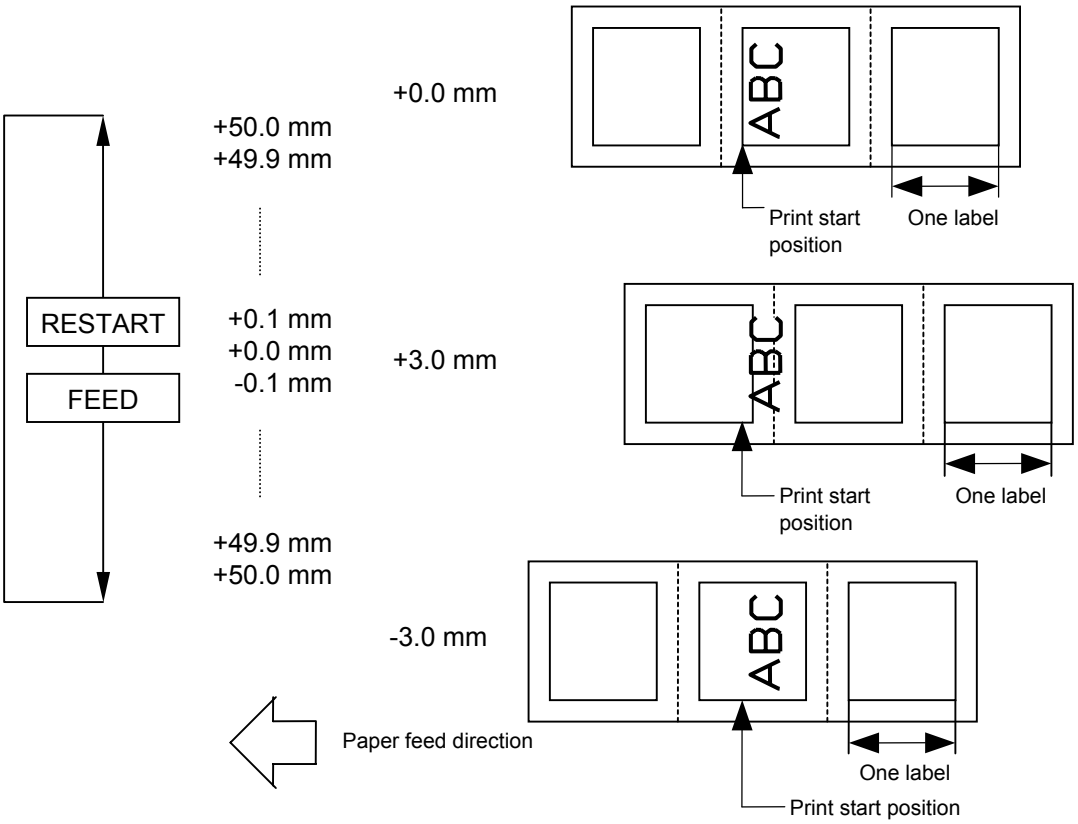
(27) Transmissive sensor manual threshold fine adjustment:
Set a fine adjustment value using the [FEED] and [RESTART] keys.

(28) Press the [PAUSE] key.

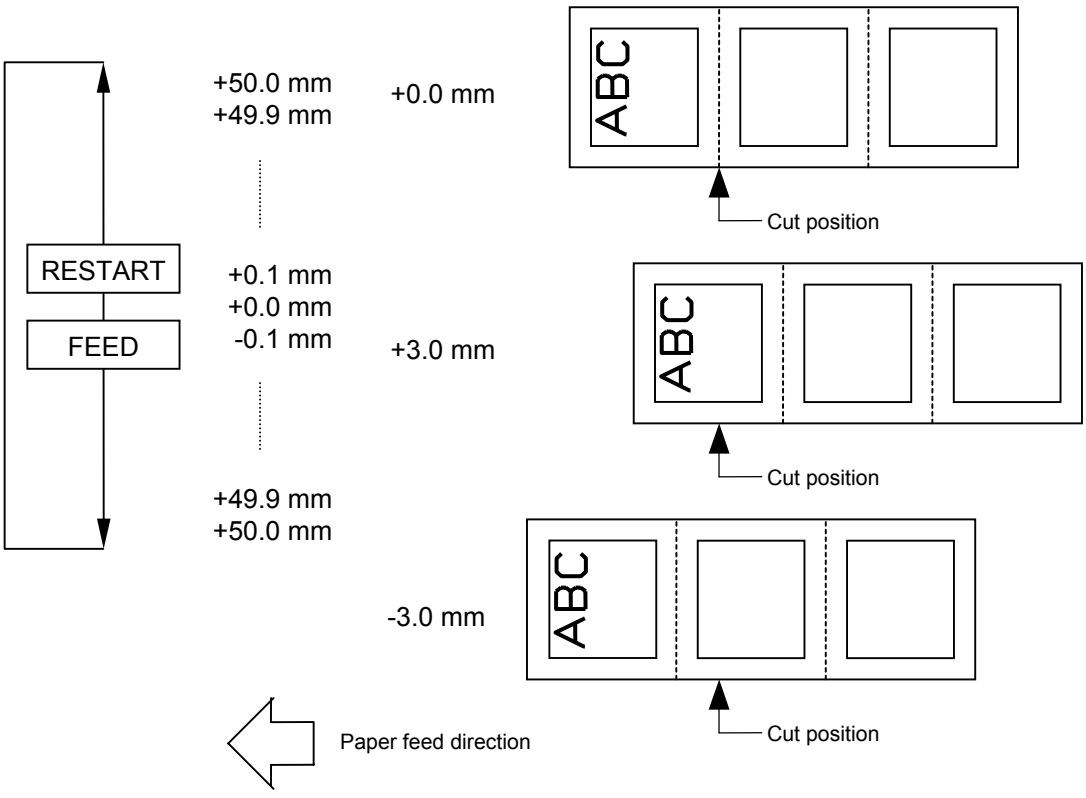
(29) The fine adjustment value setting menu is displayed.

6.4.2 Details of Fine Adjustment Value Setting

(1) Feed fine adjustment (FEED ADJ.)



(2) Cut (strip) position fine adjustment (CUT ADJ.)



[Handling of label papers having the label pitch of less than 38 mm in cut issue mode]

Method 1

Under the conditions described below, the printer performs as follows in cut issue mode.

Head up → Forward feed to the cut position → Head down → Cut → Head up → Reverse feed to the home position → Head down

Condition: When receiving the issue command, feed command, eject command
label pitch: 38.0 mm or less, with cutter, transmissive sensor
cut position fine adjustment: ±10.0 mm or less, issue mode: C

* A head up/down is performed only when the optional ribbon save module is installed. When it is not installed, use the Method 2.

NOTES: *1. Although a label, being fed to be cut, cannot be fed any more because its trailing edge has already passed the feed roller during head up, no error is detected.*

2. The print head may not be raised depending on the rise of the solenoid's temperature for head up operation in cut issue mode.

Method 2

The minimum label pitch in normal cut issue mode is 38.0 mm. When a label paper having the label pitch of less than 38.0 mm is used, an edge of a label is caught by an edge of the thermal head during a reverse feed to the home position after the paper is cut in a gap area between labels. This may prevents the label from being fed back to the proper home position. In such a case, perform the cut position fine adjustment below to solve the problem. When this method is used, one or more printed labels are left between the head and the cutter, which should be removed by an issue or a label feed.

(a) Calculation of cut position fine adjustment value

The cut position fine adjustment value is calculated using the following formula. If the paper still is not fed back to the proper home position using the value obtained, the cut position should be adjusted using any other value.

$$\text{Cut position fine adjustment value} = (\text{Number of labels left between head and cutter}) \times (\text{Label pitch})$$

$$= \left(\frac{32.8\ \text{mm}}{\text{Label pitch}} \right) \times (\text{Label pitch})$$

* Any decimal remainders are dropped.

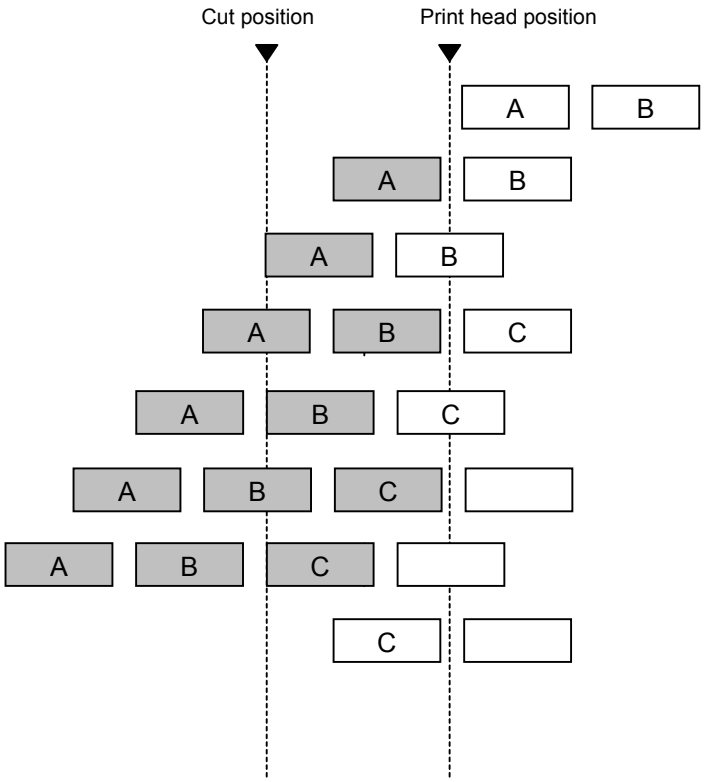
Ex) Label pitch: 30.0 mm

$$\text{Cut position fine adjustment value} = \left(\frac{32.8\ \text{mm}}{30.0\ \text{mm}} \right) \times (30.0\ \text{mm})$$

$$= 1 \times 30.0\ \text{mm}$$
$$= +30.0\ \text{mm}$$

(b) Operation example

Issue count: 3, Cut interval = 1



(1) Idling

(2) Completes printing Label (A).

(3) While printing Label (B), cuts the leading area of Label (A).

(4) Completes printing the Label (B).

(5) While printing Label (C), cuts the leading area of Label (B).

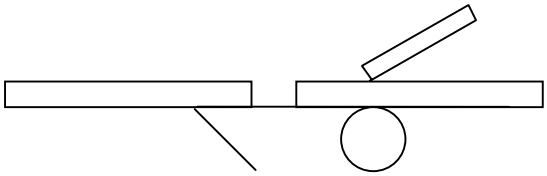
(6) Completes printing Label (C).

(7) After feeding Label (C) to the cut position, cuts the leading area of it.

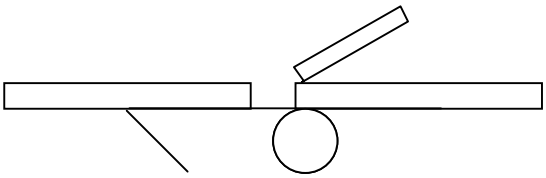
(8) Reverse feeds the label paper to the home position of Label (C).

[Strip position fine adjustment]

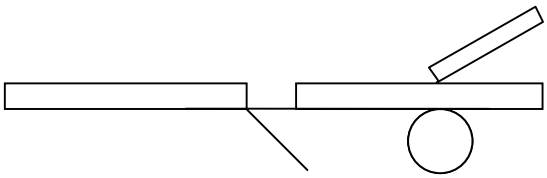
+0.0 mm

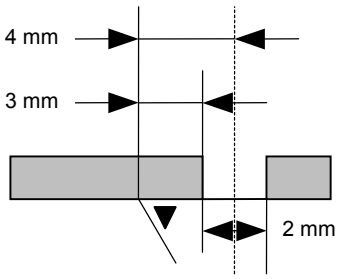


+3.0 mm



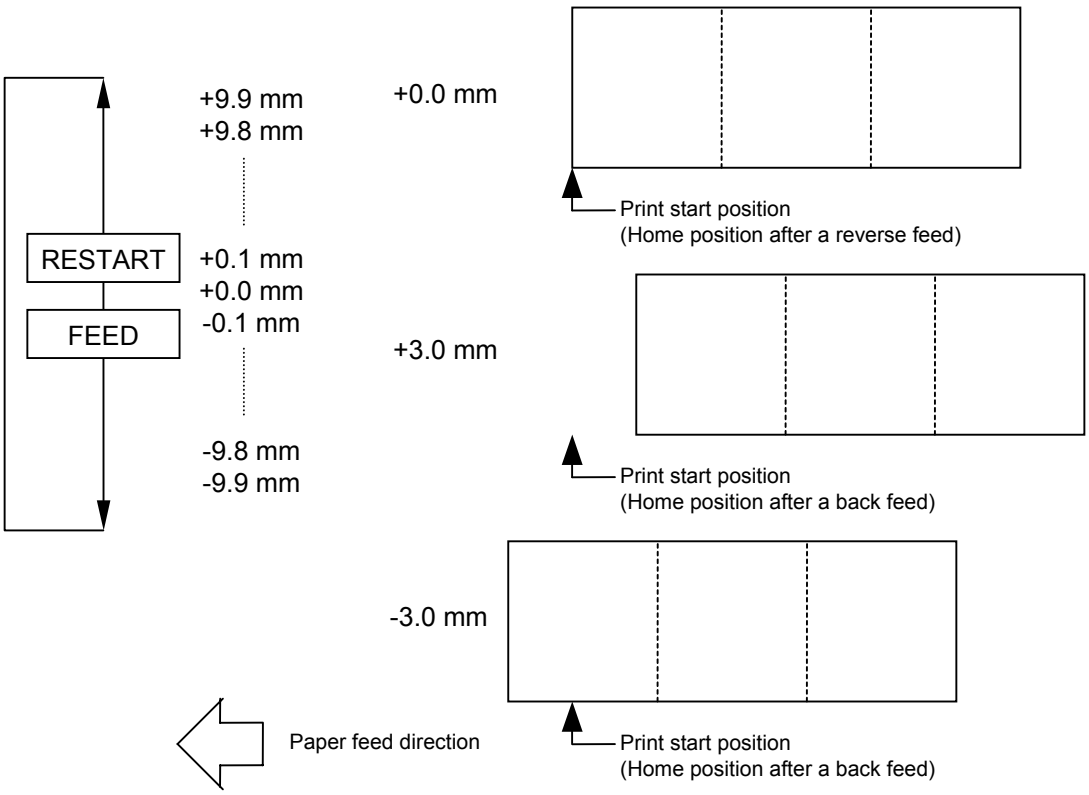
- 3.0 mm





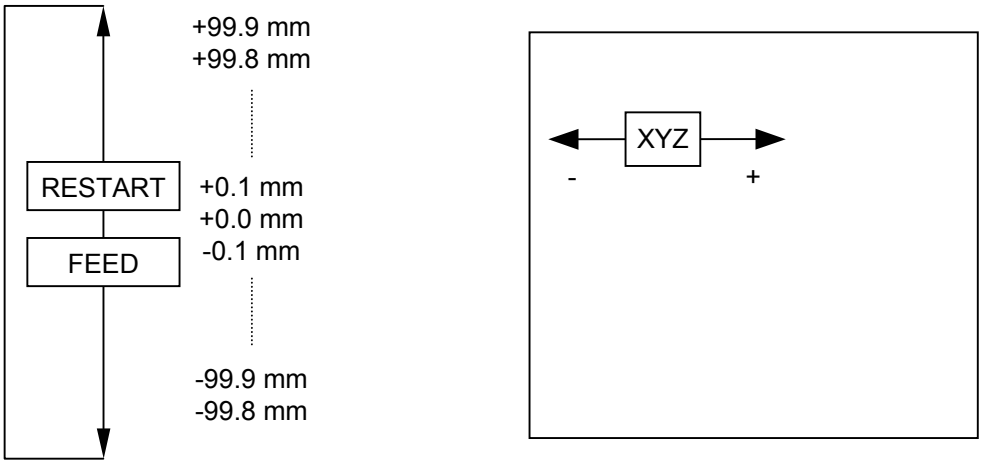
Assuming the label gap is 2 mm, the print stop position in strip issue mode is designed in a manner so that printing stops when the distance from the middle of the gap between labels to the end of the strip shaft is 4 mm.
When this print stop position is not proper because the gap is more than 2 mm, the print stop position should be adjusted using the strip position fine adjust function.

(3) Reverse feed fine adjustment (BACK ADJ.)

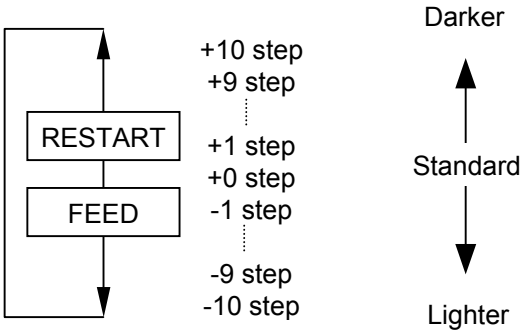


NOTE: *There may be cases where a label is not returned to the home position depending on the print conditions, even if a reverse feed length is the same as a forward feed length.*
When an operation including reverse feed (cut issue, strip issue, forward feed standby after an issue) is performed using a sensor, a label/tag may not be returned to the home position resulting an error, if the label pitch length is almost the same as the distance between the thermal print head and the paper sensor (69.8 mm). To prevent this problem, the reverse feed length should be increased by performing the reverse feed fine adjustment in the + direction.

(4) X-coordinate fine adjustment (X ADJUST.)

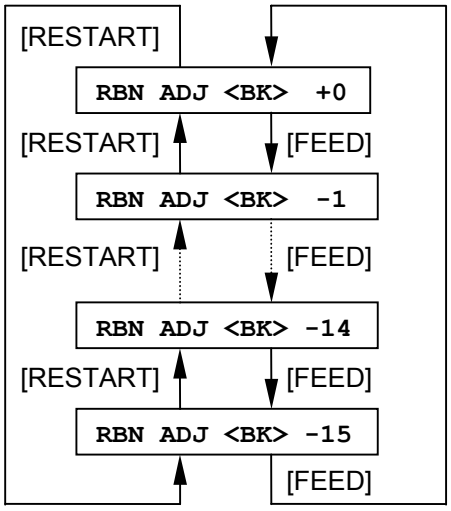


(5) Print density fine adjustment (Thermal transfer/direct thermal) (TONE ADJ.)



([Step] is not displayed on the LCD.)

(6) Ribbon motor drive voltage fine adjustment (Take-up) (RBN ADJ <FW>)



+0 step (Standard)

-1 step (5% × -1 = -5%)

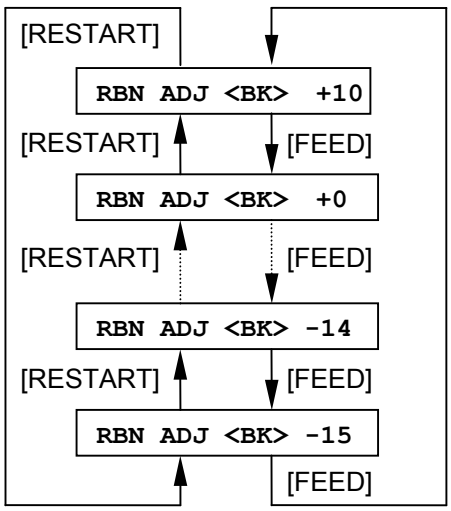
-14 step (5% × -14 = -70%)

-15 step (5% × -15 = -75%)

• 1 step = 5%

([Step] is not displayed on the LCD.)

(7) Ribbon motor drive voltage fine adjustment (Feed) (RBN ADJ <BK>)



+10 step (5% × -1 = -5%)

+0 step (Standard)

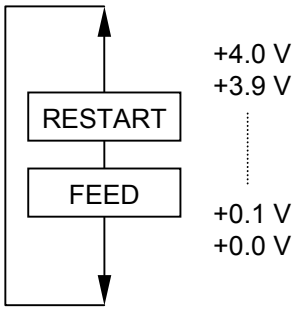
-14 step (5% × -14 = -70%)

-15 step (5% × -15 = -75%)

• 1 step = 5%

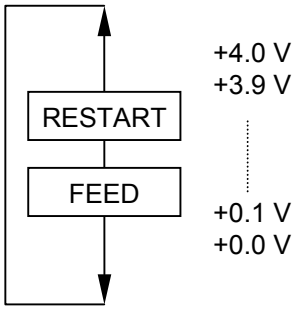
([Step] is not displayed on the LCD.)

(8) Transmissive sensor manual threshold fine adjustment (THRESHOLD<T>)



NOTE: *If "0.0 V" is set, the value "0.0 V" is returned to the value (1.0 V) after the power is turned off and on again.*

(9) Reflective sensor manual threshold fine adjustment (THRESHOLD<R>)



NOTE: *If "0.0 V" is set, the value "0.0 V" is returned to the value (1.4 V) after the power is turned off and on again.*

Supplementary explanations

- When the [RESTART] and [FEED] keys are pressed at the same time, the display shows the system mode menu.
- If the [RESTART] or [FEED] key is held down for 0.5 seconds when a fine adjustment value is being set, the printer enters repeat mode, in which the key is entered repeatedly.
- A changed fine adjustment value is stored in memory by pressing the [PAUSE] key.
- The printer is controlled by a sum of a fine adjustment parameter value programmed on the printer and a fine adjustment command value from the PC. The maximum value for each fine adjustment is as follows:

  Feed fine adjustment ..... ±50.0 mm
  Strip position fine adjustment ..... ±50.0 mm
  Reverse feed fine adjustment..... ±9.9 mm
  Print density fine adjustment ..... ±10 step
  X-coordinate fine adjustment..... ±99.5 mm
  Ribbon motor drive voltage fine adjustment (Take-up) ..... -15 to +0 step
  Ribbon motor drive voltage fine adjustment (Feed) ..... -15 to +0 step

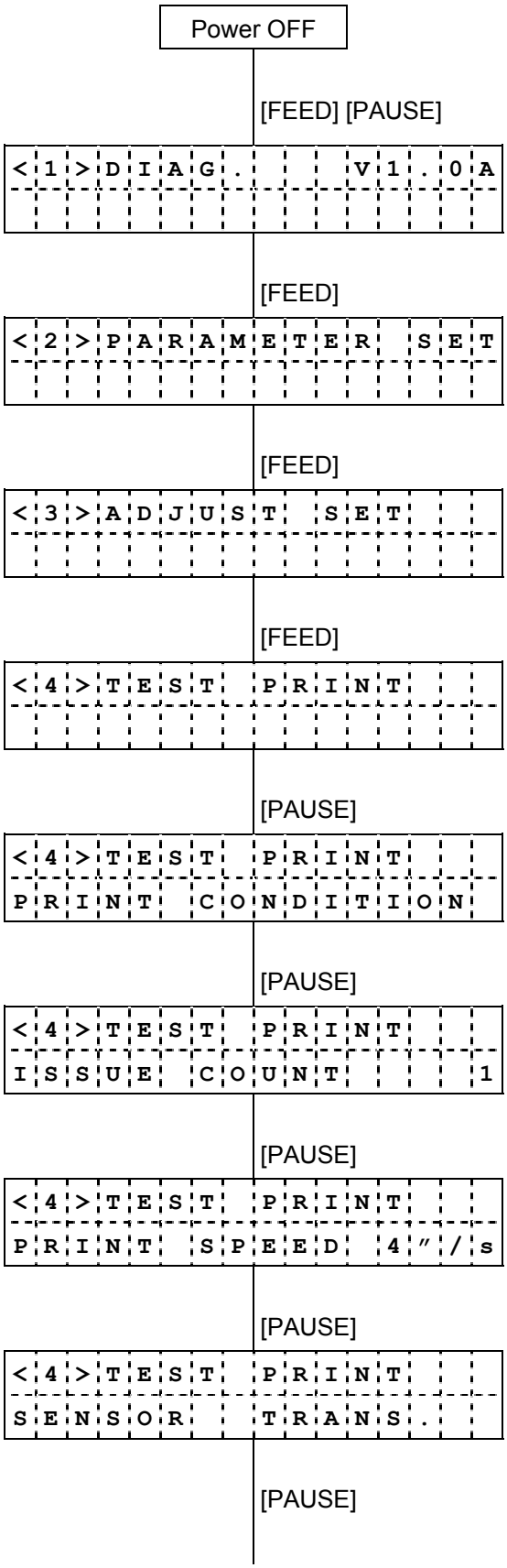
- An X-coordinate fine adjustment is performed to finely adjust the X-coordinate of a drawing in the left or right direction in an effective print width range. (Even if a value is set to less than 0 as a result of the fine adjustment, the value is set to 0.)
- An X-coordinate fine adjustment is not effective for self-test print (maintenance counter values, various parameter values, and automatic self-test) and other test print.
- A print density fine adjustment value is +0 step at the time of shipment from the factory.
- A ribbon take-up/feed motor drive voltage fine adjustment value is a sum of a fine adjustment value by a command (from the PC) and a fine adjustment value in system mode (by key operation). The maximum fine adjustment value is -15 for both the ribbon take-up motor and the ribbon feed motor.
- A print density fine adjustment value is a sum of a fine adjustment value by a command (from the PC) and a fine adjustment value in system mode (by key operation). The respective maximum fine adjustment value is ±10. The maximum value for each print speed, 203 dpi and 300 dpi, is as below. When the value exceeds the maximum, it is automatically corrected to the maximum.

	B-SX6T		B-SX8T	
Print Speed	Thermal direct	Thermal transfer	Thermal direct	Thermal transfer
3 ips	+10 step	+10 step	+10 step	+10 step
4 ips	+5 step	+5 step	+5 step	+5 step
8 ips	+2 step	+2 step	+2 step	+2 step

6.5 TEST PRINT

6.5.1 Test Print Operation Example

(1) Normal test print



(1) Power off state

(2) While holding the [FEED] and [PAUSE] keys down, turn the power on.

(3) The self-test menu is displayed.

(4) Press the [FEED] key.

(5) System mode menu display
(Parameter setting)

(6) Press the [FEED] key.

(7) System mode menu display
(Fine adjustment value setting)

(8) Press the [FEED] key.

(9) System mode menu display
(Test print)

(10) Press the [PAUSE] key.

(11) Test print condition setting mode

(12) Press the [PAUSE] key.

(13) Issue count setting mode:
Select an issue count using the [FEED] and [RESTART] keys.

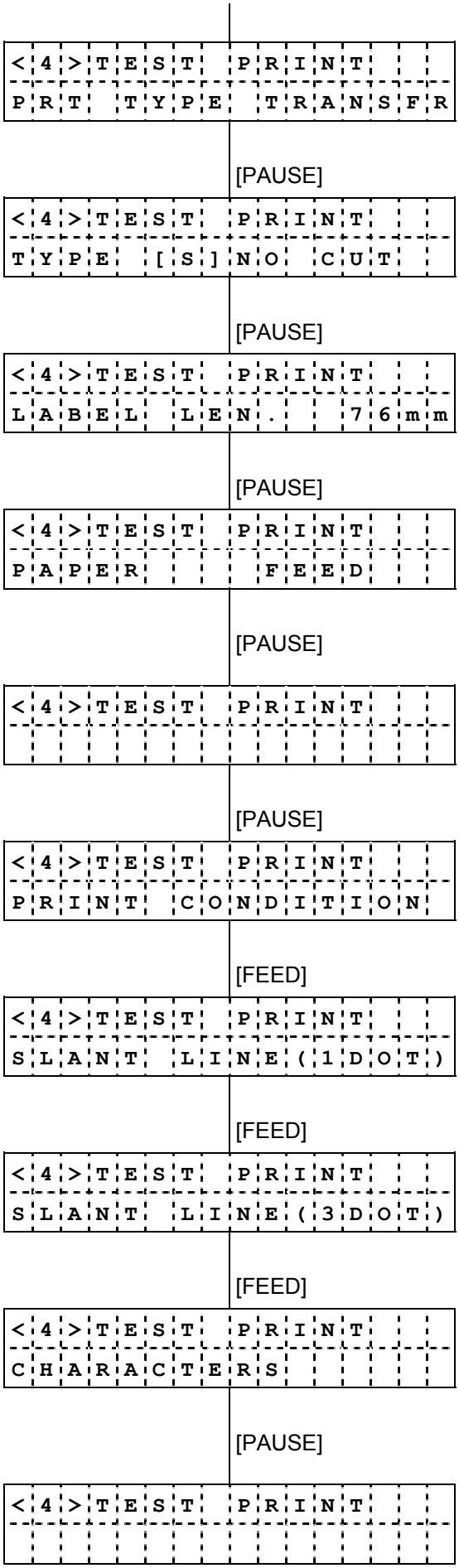
(14) Press the [PAUSE] key.

(15) Print speed setting mode:
Select a print speed using the [FEED] and [RESTART] keys.

(16) Press the [PAUSE] key.

(17) Sensor setting mode:
Select a sensor using the [FEED] and [RESTART] keys.

(18) Press the [PAUSE] key.



(19) Print type setting mode:
Select a print type using the [FEED] and [RESTART] keys.

(20) Press the [PAUSE] key.

(21) Issue type setting mode:
Select a issue type using the [FEED] and [RESTART] keys.

(22) Press the [PAUSE] key.

(23) Label length setting mode:
Select a label length using the [FEED] and [RESTART] keys.

(24) Press the [PAUSE] key.

(25) One label feed mode:
Select a mode using the [FEED] and [RESTART] keys.

(26) Press the [PAUSE] key.
(One label is fed.)

(27) System mode menu display
(Test print)

(28) Press the [PAUSE] key.

(29) Test print condition setting mode

(30) Press the [FEED] key.

(31) 1-dot slant line print mode

(32) Press the [FEED] key.

(33) 3-dot slant line print mode

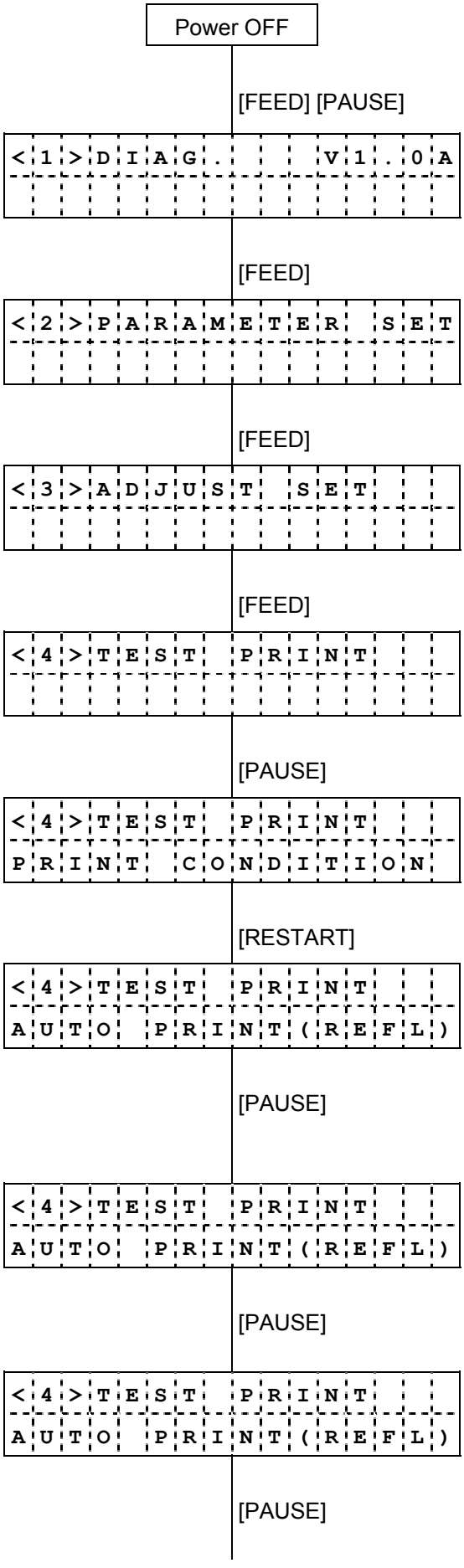
(34) Press the [FEED] key.

(35) Character print mode

(36) Press the [PAUSE] key.
(One label is printed.)

(37) System mode menu display
(Test print)

(2) Test print for assembly process



(1) Power off state

(2) While holding the [FEED] and [PAUSE] keys down, turn the power on.

(3) The self-test menu is displayed.

(4) Press the [FEED] key.

(5) System mode menu display
(Parameter setting)

(6) Press the [FEED] key.

(7) System mode menu display
(Fine adjustment value setting)

(8) Press the [FEED] key.

(9) System mode menu display
(Test print)

(10) Press the [PAUSE] key.

(11) Test print condition setting mode

(12) Press the [RESTART] key.

(13) Assembly process automatic print mode
(Reflective sensor)

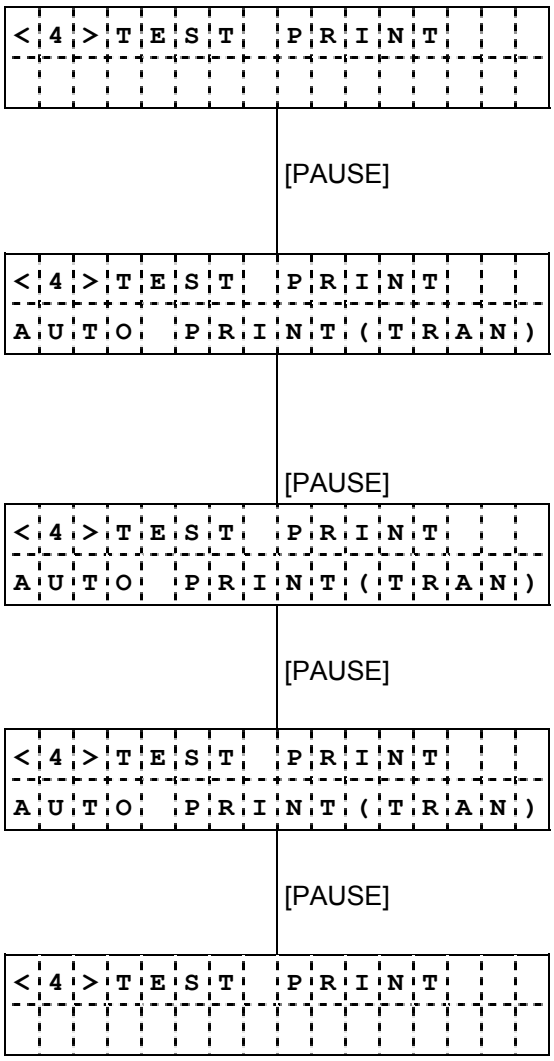
(14) Press the [PAUSE] key.
[One label is fed.
3-dot slant line: 5 labels are printed.]

(15) Assembly process automatic print mode
(Reflective sensor)

(16) Press the [PAUSE] key.
(Bar code: 5 labels are printed.)

(17) Assembly process automatic print mode
(Reflective sensor)

(18) Press the [PAUSE] key.
(Characters: 5 labels are printed.)



(19) System mode menu display
(Test print)

(20) Press the [PAUSE] key.

(21) Assembly process automatic print mode
(Transmissive sensor)

(22) Press the [PAUSE] key.
(One label is fed.
3-dot slant line: 5 labels are printed.)

(23) Assembly process automatic print mode
(Transmissive sensor)

(24) Press the [PAUSE] key.
(Bar code: 5 labels are printed.)

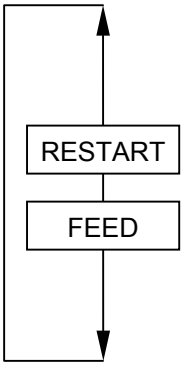
(25) Assembly process automatic print mode
(Transmissive sensor)

(26) Press the [PAUSE] key.
(Characters: 5 labels are printed.)

(27) System mode menu display
(Test print)

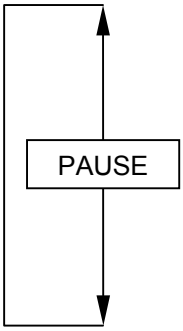
6.5.2 Details of Test Print Setting

(1) Test print mode



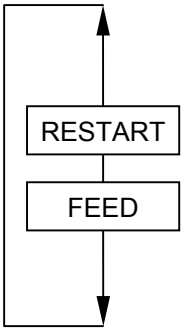
- PRINT CONDITION (Test print condition parameters)
- SLANT LINE(1DOT) (1-dot slant line print)
- SLANT LINE(3DOT) (3-dot slant line print)
- CHARACTERS (Character print)
- BARCODE (Bar code print)
- NON-PRINTING (Nothing prints.)
- FACTORY TEST (Line print for assembly process)
- AUTO PRINT(TRAN) (Assembly process automatic print/transmissive sensor)
- AUTO PRINT(REFL) (Assembly process automatic print/reflective sensor)

(2) Test print condition parameters (PRINT CONDITION)



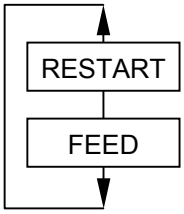
- ISSUE COUNT (Issue count)
- PRINT SPEED (Print speed)
- SENSOR (Sensor)
- PRT TYPE (Print type)
- TYPE (Issue type)
- LABEL LEN. (Label length)
- PAPER FEED (Paper feed mode)
- <4> TEST PRINT (Test print mode)
- PRINT CONDITION (Test print condition parameters)

(3) Issue count (ISSUE COUNT)



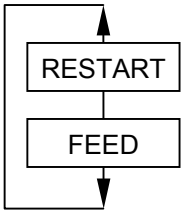
- 5000 (Issue count: 5000)
- 1000 (Issue count: 1000)
- 500 (Issue count: 500)
- 100 (Issue count: 100)
- 50 (Issue count: 50)
- 10 (Issue count: 10)
- 5 (Issue count: 5)
- 3 (Issue count: 3)
- 1 (Issue count: 1)

(4) Print speed (PRINT SPEED)



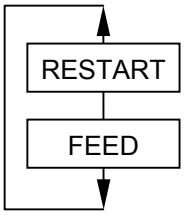
- 8 ips (8 inches/sec)
- 4 ips (4 inches/sec)
- 3 ips (3 inches/sec)

(5) Sensor (SENSOR)



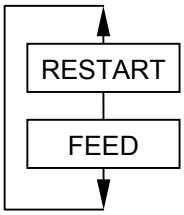
- NONE (No sensors used)
- REFLECT. (Reflective sensor)
- TRANS. (Transmissive sensor)

(6) Print type (PRT TYPE)



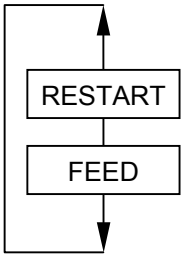
- TRANSFR (Thermal transfer: transparent ribbon)
- NO TRAN (Thermal transfer: non-transparent ribbon)
- DIRECT (Direct thermal)

(7) Issue type (TYPE)



- [S] NO CUT (Batch issue mode)
- [C] WITH CUT (Issue with a cut)
- [H] PEEL OFF (Strip issue mode)

(8) Label length (LABEL LEN.)

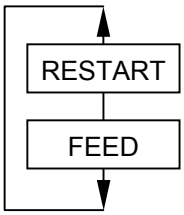


- 999 (Label length: 999 mm)
- 998 (Label length: 998 mm)
- 997 (Label length: 997 mm)

⋮

- 7 (Label length: 7 mm)
- 6 (Label length: 6 mm)
- 5 (Label length: 5 mm)

(9) Paper feed (PAPER)



- FEED (Paper feed is performed.)
- NO FEED (Paper feed is not performed.)

(10) Parameter values after the power is turned off and on again

- Menu selection: Test print condition parameter setting
- Issue count (ISSUE COUNT): 1
- Print speed (PRINT SPEED): 4 ips
- Sensor (SENSOR): Transmissive sensor
- Print type (PRT TYPE): Thermal transfer print mode: transparent ribbon
- Issue type (TYPE): Batch issue
- Label length (LABEL LEN.): 76 mm
- Paper feed (PAPER): Paper feed is performed.

(11) Supplementary explanations

- When the [FEED] and [RESTART] keys are pressed at the same time, the display shows the system mode menu.
- If the [RESTART] or [FEED] key is held down for 0.5 seconds or more when a parameter is being set or a menu is being selected, the printer enters repeat mode, in which the key is entered repeatedly.
- Each fine adjustment parameter is effective for test print except the X-coordinate fine adjustment.
- When an error occurs during a test print, an error message is displayed and printing stops. The error is cleared by pressing the [PAUSE] key and the display shows the system mode menu. Printing is not automatically resumed after the error is cleared.
- A selected menu or changed parameter becomes effective by pressing the [PAUSE] key and is retained until the power is turned off.
- A label length, larger than the image buffer length, is not acceptable. If the label length is larger than the image buffer length, the printer prints data (= image buffer length) then stops, or the printer stops because of an error.
- The ribbon saving function automatically starts when the space area is as described below if the ribbon saving function parameter is set to ON and thermal transfer is selected for the print type:

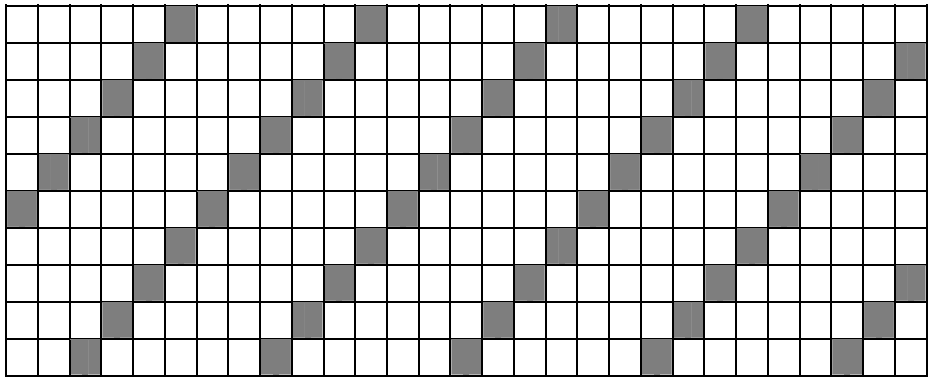
  - 3”/sec: 20 mm or more
  - 4”/sec: 20 mm or more
  - 8”/sec: 30 mm or more

  To use the ribbon saving function for more than once in a label/tag, there should be at least an 8-mm print area between non-print areas where the ribbon saving function is performed.

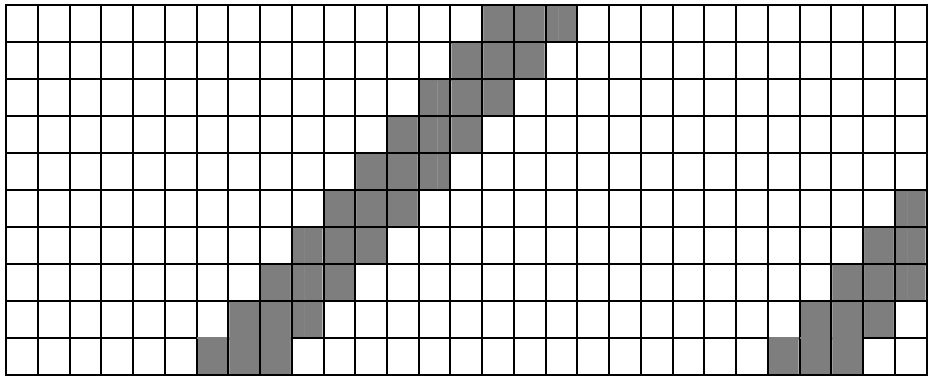
- The test print for the assembly process is performed under the following conditions. Parameter values and a print density fine adjustment value are ignored.
  - Operations: ① Feeds one label.
    ② Prints 3-dot slant lines.
    ③ Prints bar codes.
    ④ Prints characters.
  - Issue count: 5 labels for each print operation
  - Print speed: 8 ips
  - Sensor: Reflective or transmissive sensor
  - Print type: Thermal transfer print mode
  - Issue mode: Batch issue
  - Label length: 76 mm
  - Print density fine adjustment value: ±0
- When the transmissive sensor is selected, the gap length between labels should be 3 mm.

- Enlarged view of slant lines

1-dot slant line print (Coverage rate: 16.7%)

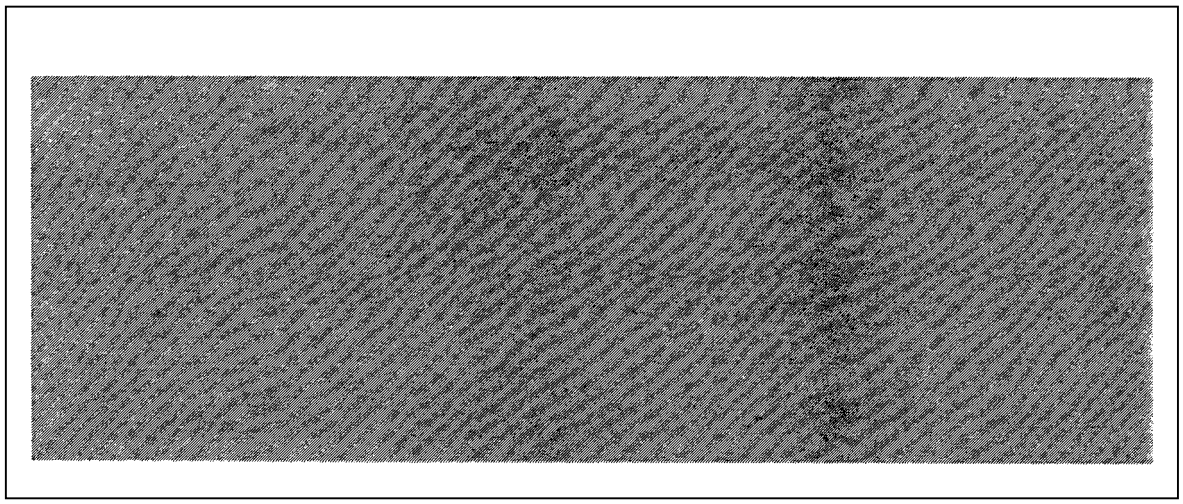


3-dot slant line print (Coverage rate: 16.7%)

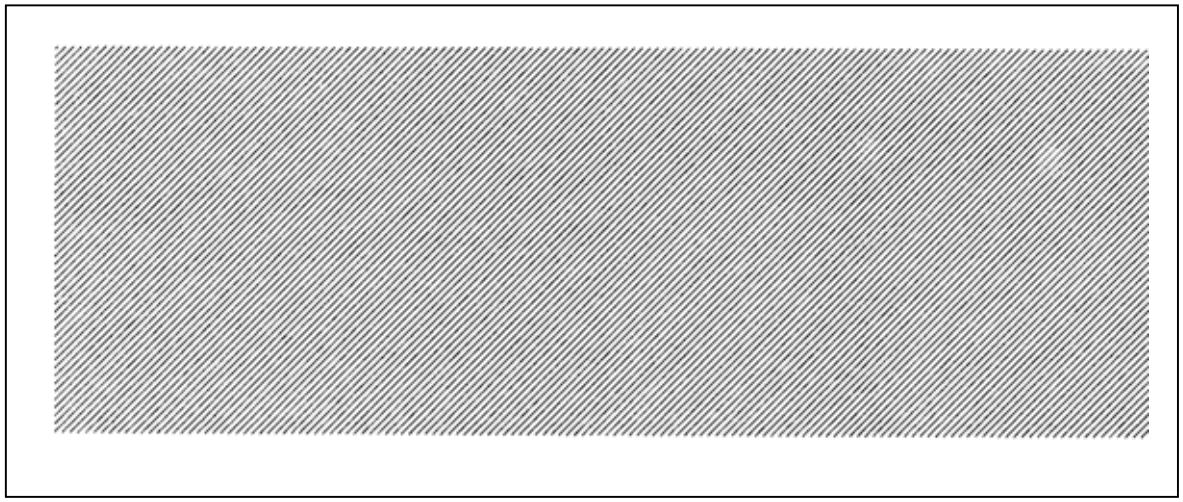


6.5.3 Test Print Samples

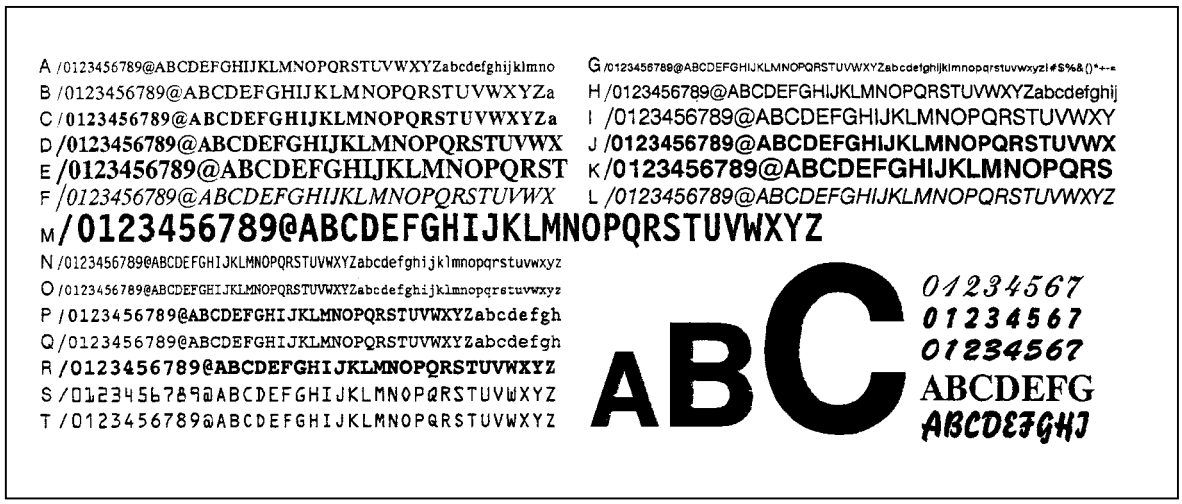
(1) B-SX8T (70% reduction)



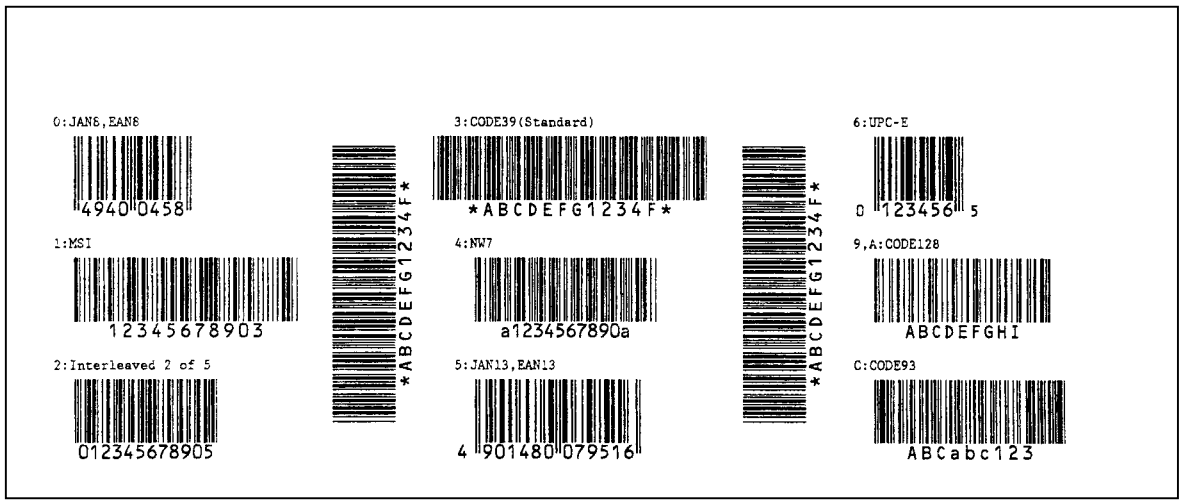
1-dot slant line print



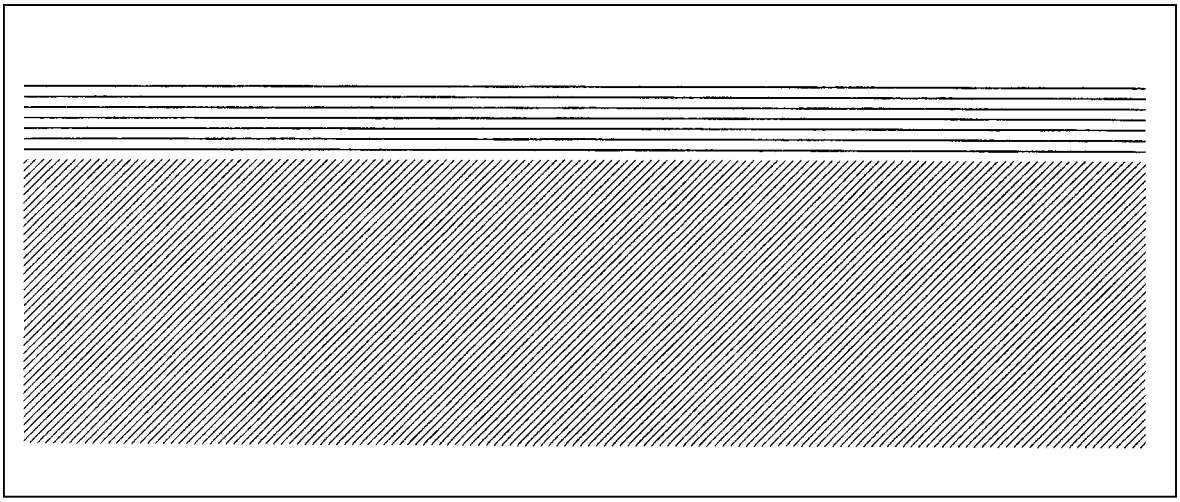
3-dot slant line print



Character print

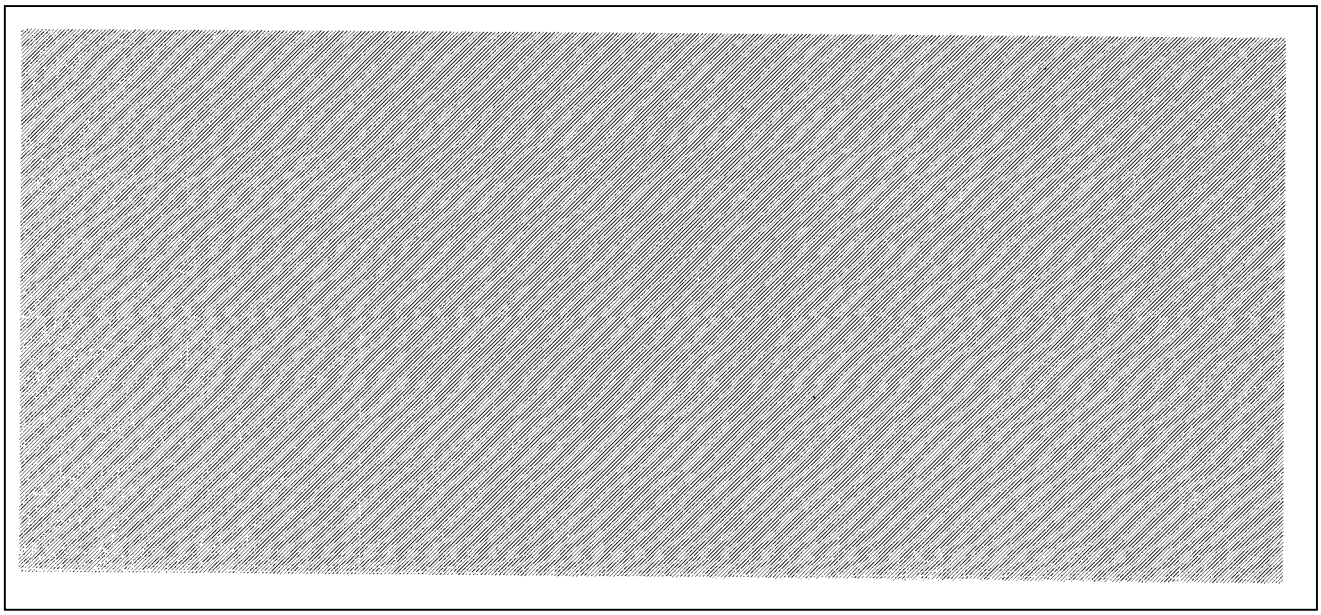


Bar code print

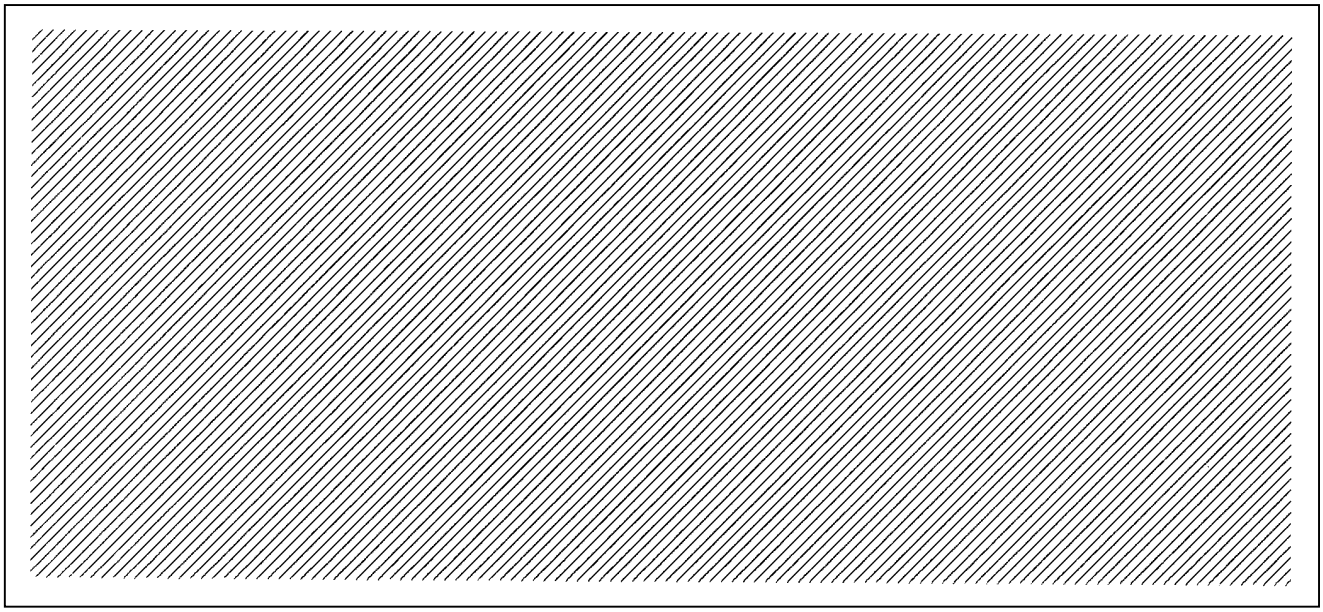


Line print for assembly process

(2) B-SX6T



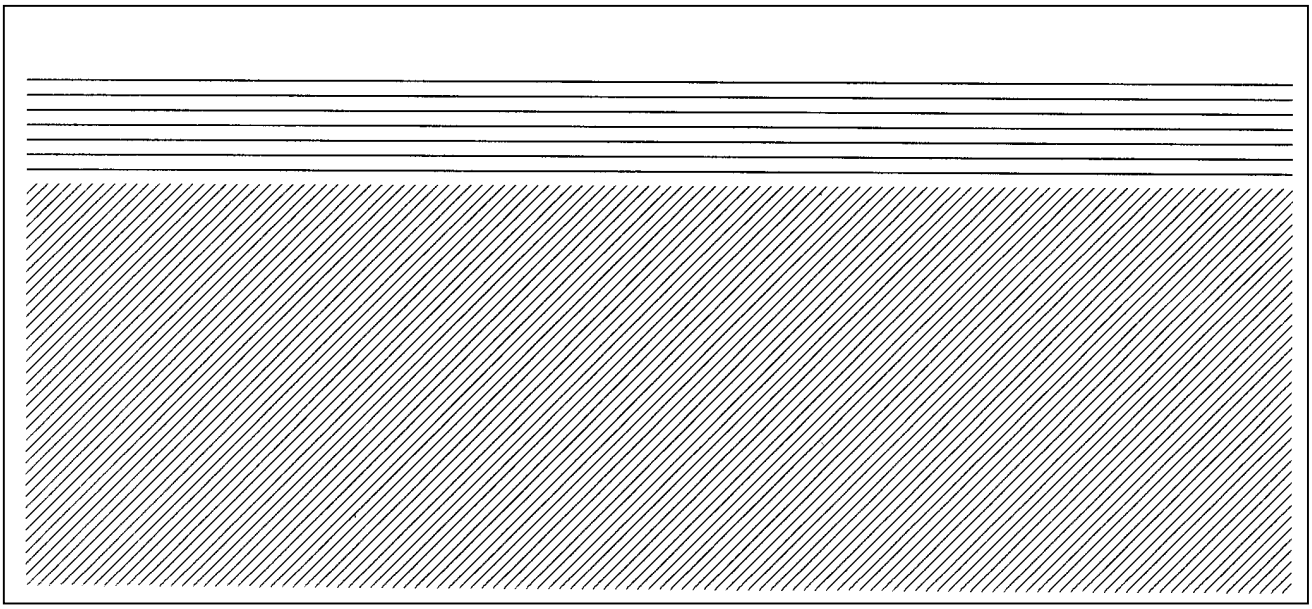
1-dot slant line print



3-dot slant line print

Character print

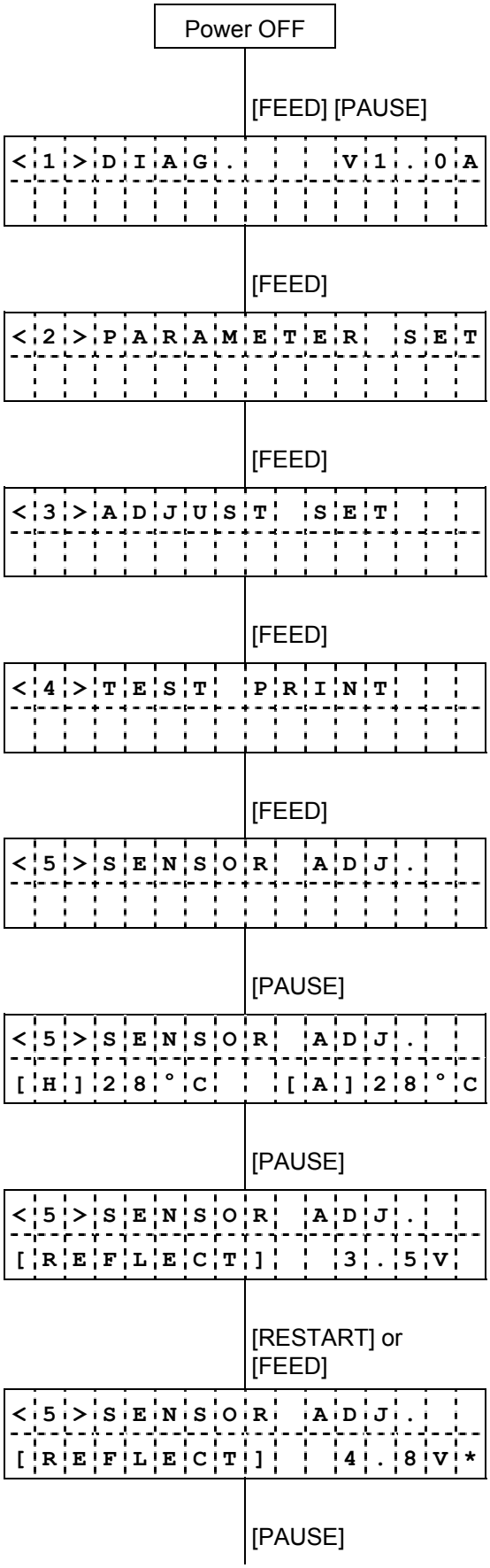
Bar code print



Line print for assembly process

6.6 SENSOR DISPLAY/ADJUSTMENT

6.6.1 Sensor Display/Adjustment Operation Example



(1) Power off state

(2) While holding the [FEED] and [PAUSE] keys down, turn the power on.

(3) The self-test menu is displayed.

(4) Press the [FEED] key.

(5) System mode menu display (Parameter setting)

(6) Press the [FEED] key.

(7) System mode menu display (Fine adjustment value setting)

(8) Press the [FEED] key.

(9) System mode menu display (Test print)

(10) Press the [FEED] key.

(11) System mode menu display (Sensor display/adjustment)

(12) Press the [PAUSE] key.

(13) Thermal head temperature/open-air temperature display

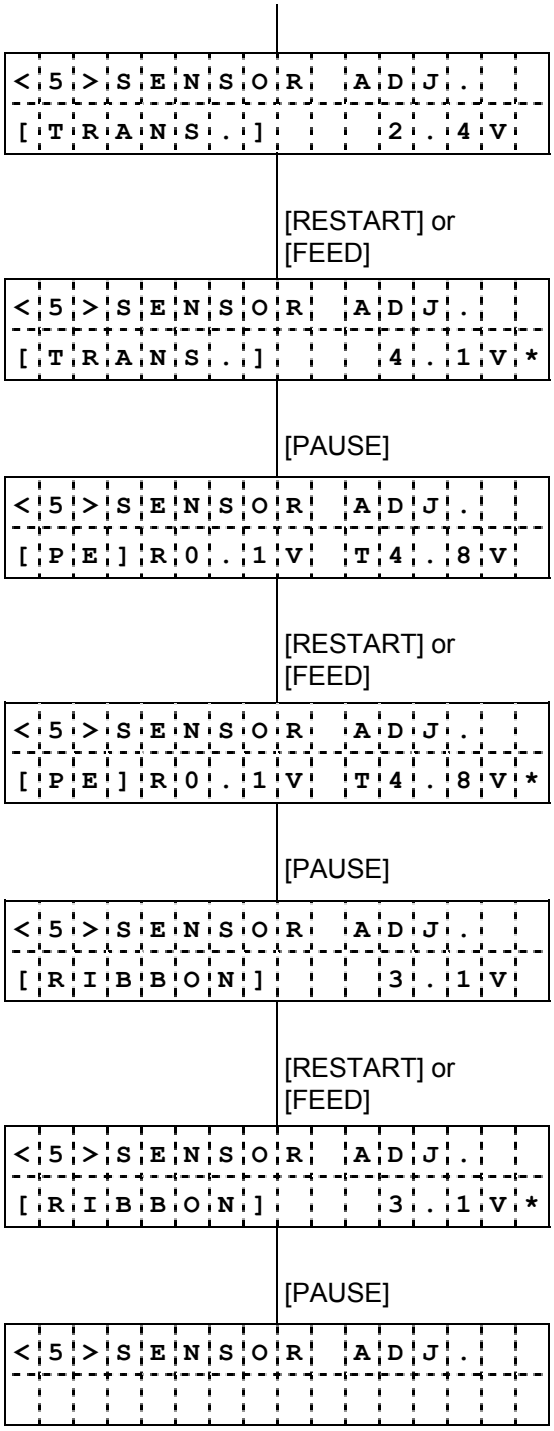
(14) Press the [PAUSE] key.

(15) Reflective sensor adjustment value display: Load tag paper. (The black mark should not cover the sensor.)

(16) Hold down the [RESTART] or [FEED] key for 3 seconds or more.

(17) "*" is displayed when the reflective sensor adjustment is completed.

(18) Press the [PAUSE] key.



(19) Transmissive sensor adjustment value display:
Remove one label from a label paper and load the paper. (The remaining labels should not cover the sensor.)

(20) Hold down the [RESTART] or [FEED] key for 3 seconds or more.

(21) "*" is displayed when the transmissive sensor adjustment is completed.

(22) Press the [PAUSE] key.

(23) Reflective/transmissive sensor adjustment value display (without paper):
Remove any paper covering the sensor.

(24) Hold down the [RESTART] or [FEED] key for 3 seconds or more.

(25) "*" is displayed when the reflective/ transmissive sensor adjustment is completed.

(26) Press the [PAUSE] key.

(27) Ribbon end sensor adjustment value display
Place a ribbon on the sensor.

(28) Hold down the [RESTART] or [FEED] key for 3 seconds or more.

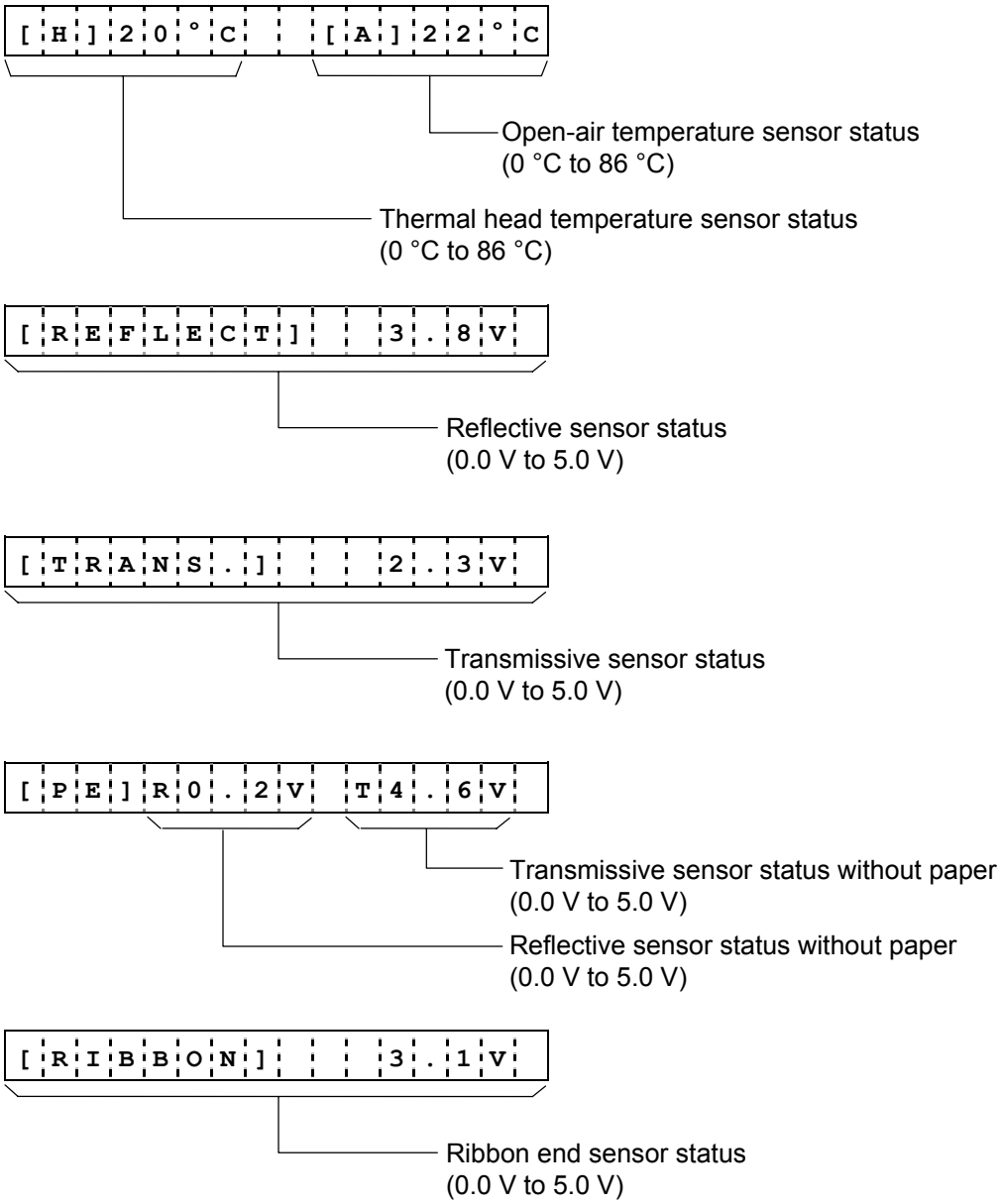
(29) "*" is displayed when the ribbon end sensor adjustment is completed.

(30) Press the [PAUSE] key.

(31) System mode menu display
(Sensor display/adjustment)

6.6.2 Details of Sensor Adjustment Value Display

(1) Sensor adjustment value display

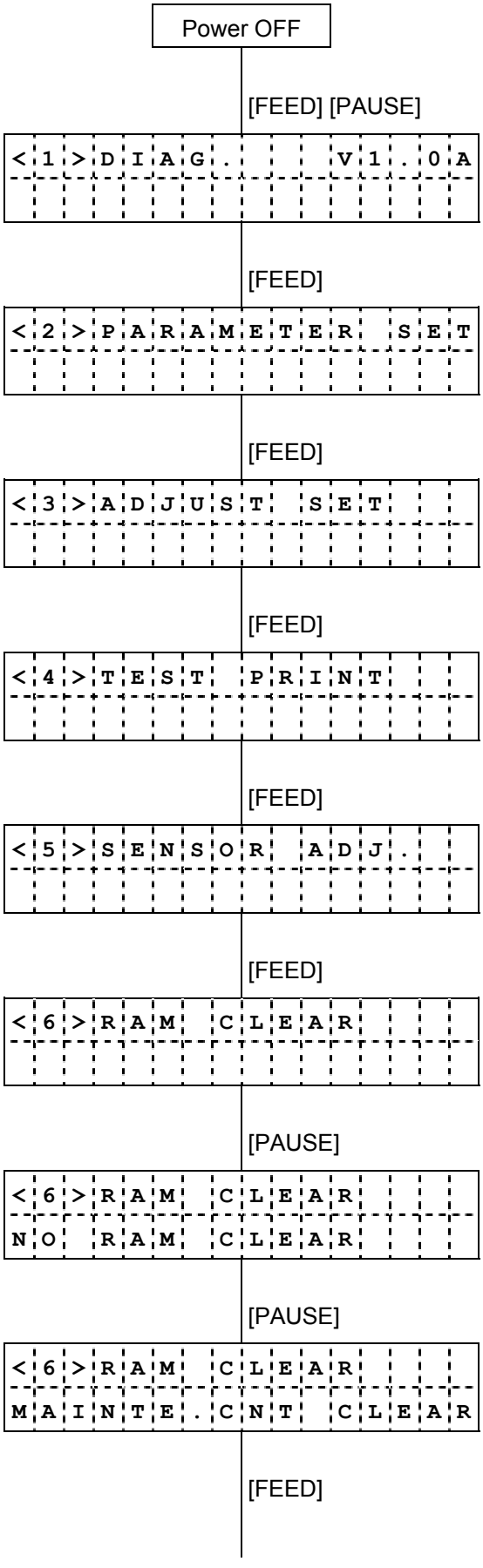


(2) Supplementary explanations

- During a sensor check, status of each sensor is monitored and displayed every 200 msec. (The display changes in accordance with sensor status.)
- When the [FEED] and [RESTART] keys are pressed at the same time, the system mode menu is displayed.

6.7 RAM CLEAR

6.7.1 RAM Clear Operation Example



(1) Power off state

(2) While holding the [FEED] and [PAUSE] keys down, turn the power on.

(3) The self-test menu is displayed.

(4) Press the [FEED] key.

(5) System mode menu display (Parameter setting)

(6) Press the [FEED] key.

(7) System mode menu display (Fine adjustment value setting)

(8) Press the [FEED] key.

(9) System mode menu display (Test print)

(10) Press the [FEED] key.

(11) System mode menu display (Sensor display/adjustment)

(12) Press the [FEED] key.

(13) System mode menu display (RAM clear)

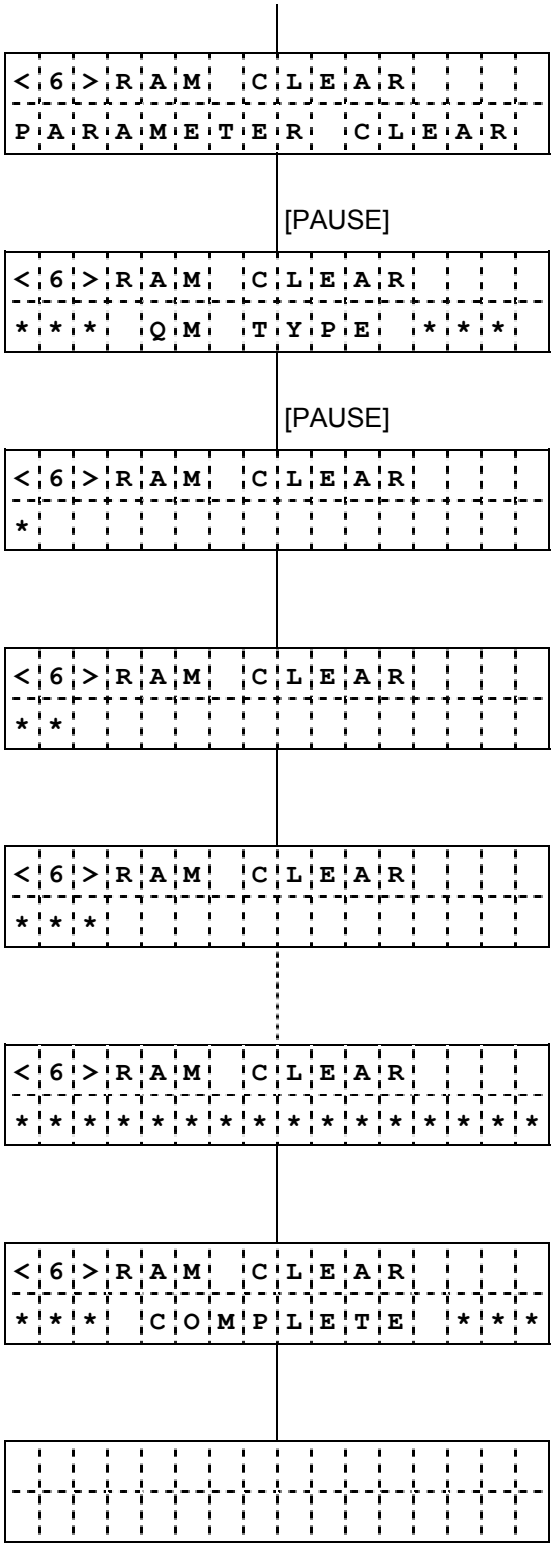
(14) Press the [PAUSE] key.

(15) No RAM clear mode
(*) A mode to prevent RAM clear from being performed mistakenly

(16) Press the [PAUSE] key.

(17) Maintenance counter clear mode

(18) Press the [FEED] key.



(19) Parameter clear mode

(20) Press the [PAUSE] key.

(21) RAM clear for the QM type

(22) Press the [PAUSE] key.

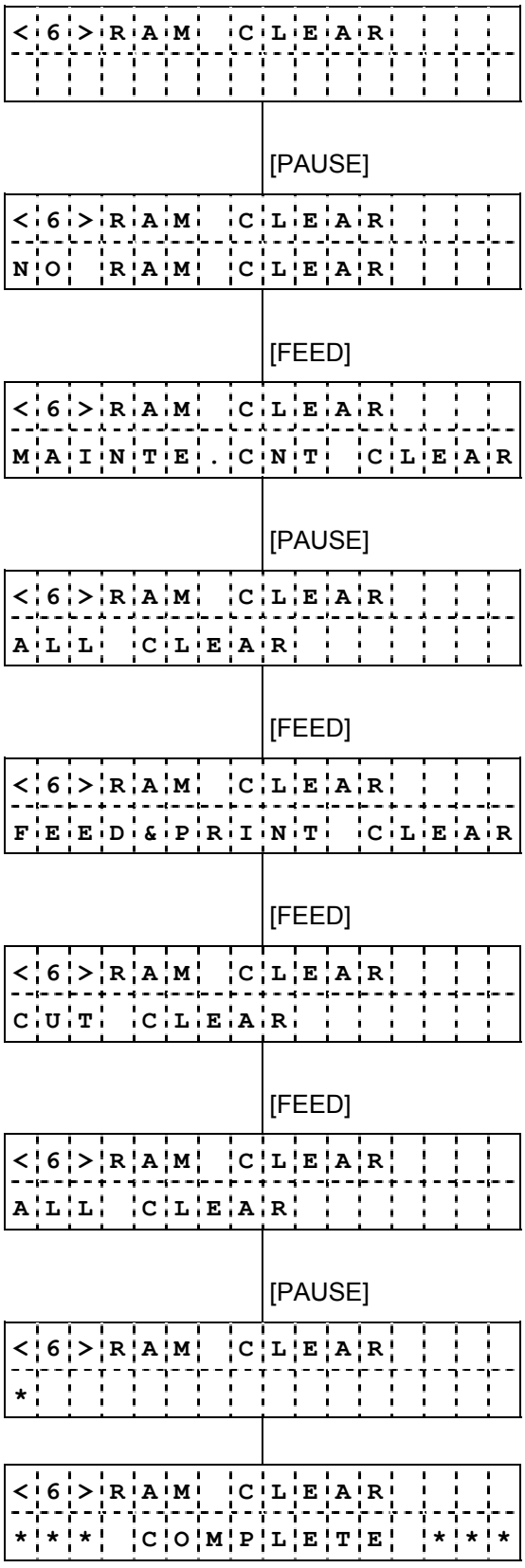
(23) Parameter clear is executed.

(24) Progress display

(25) Parameter clear is complete.

(26) Turn the power off.

6.7.1.1 Maintenance Counter Clear Operation Example



(1) System mode menu display
(RAM clear)

(2) Press the [PAUSE] key.

(3) No RAM clear mode
(*) A mode to prevent RAM clear from being performed mistakenly

(4) Press the [FEED] key.

(5) Maintenance counter clear mode

(6) Press the [PAUSE] key.

(7) All clear mode

(8) Press the [PAUSE] key.

(9) FEED/PRINT counter clear mode

(10) Press the [FEED] key.

(11) Parameter clear is executed.

(12) Press the [FEED] key.

(13) All clear mode

(14) Press the [PAUSE] key.

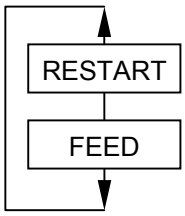
(15) All clear is performed.

(16) Maintenance counter clear is complete.

(17) Turn the power off.

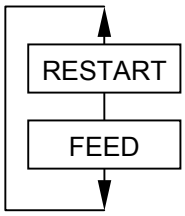
6.7.2 Details of RAM Clear

(1) RAM clear mode



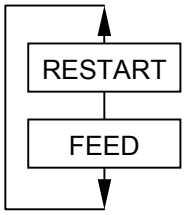
- NO RAM CLEAR
- MAINTE.CNT CLEAR
- PARAMETER CLEAR

(2) Destination type



- QM TYPE (for North/South America/Europe/Asia/China)
- CND TYPE (only for the custom model)
- JA TYPE (for Japan)

(3) Maintenance counter clear mode



- ALL CLEAR (Maintenance counter is all initialized.)
- FEED & PRINT CLEAR (Label distance covered and print distance are initialized.)
- CUT CLEAR (Cut count is initialized.)

(4) Supplementary explanations

- When the [FEED] and [RESTART] keys are pressed at the same time, the display shows the system mode menu.
- When “COMPLETE” is displayed after a RAM clear is complete, turn off the power.
- The total label distance covered, sensor adjustment values (system mode <5>), the IP address setting, socket communication port number, LCD language, and data of flash memory on the CPU are not cleared by the RAM clear.
- Number of successful RFID write and number of failure in RFID write cannot be cleared by RAM clear.
- Password setting to protect error tag detection, access password setting, and automatic unlock function setting cannot be cleared by RAM clear. (The initial values in the table are the factory default.)
- System mod password setting cannot be cleared by RAM clear.
- Destination type is printed on the upper right area of a self-test print result for maintenance counter values and parameter values.

(5) Values after maintenance counter clear

Item	Value
Label distance covered	0 km
Print distance	0 km
Cut count	0
Head up and down cycle count	0
Ribbon motor drive time	0 hours
Solenoid drive time for head up	0 hours
RS-232C hardware error count	0
System error count	0
Momentary power interruption count	0

(6) Items initialized by a maintenance counter clear

Item		Clear mode		
		ALL	FEED	CUT
Label distance covered	FEED	○	○	---
Print distance	PRINT	○	○	---
Cut count	CUT	○	---	○
Head up and down cycle count	HEAD U/D	○	---	---
Ribbon motor drive time	RIBBON	○	---	---
Solenoid drive time for head up	SOLENOID	○	---	---
RS-232C hardware error count	232C ERR	○	---	---
System error count	SYSTEM ERR	○	---	---
Momentary power interruption count	POWER FAIL	○	---	---

○: Item to be initialized.

(7) Values after parameter clear

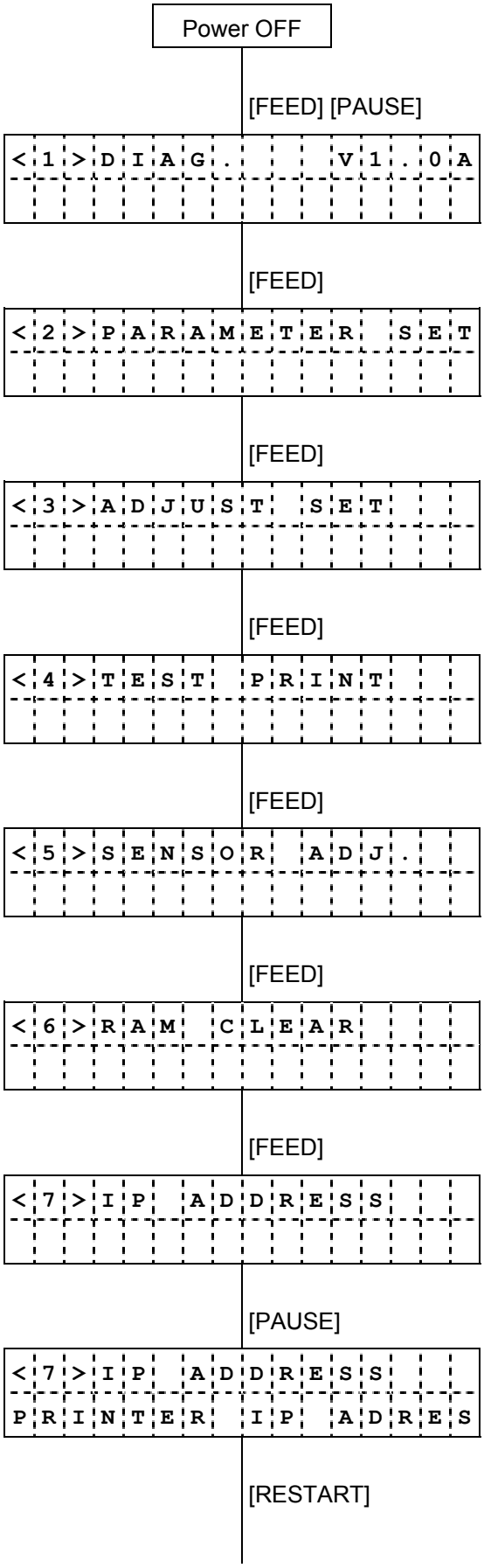
Parameter	Value
Feed fine adjustment (PC)	0 mm
Cut (strip) position fine adjustment (PC)	0 mm
Reverse feed fine adjustment (PC)	0 mm
Print density fine adjustment: Thermal transfer print mode (PC)	0
Print density fine adjustment: Direct thermal print mode (PC)	0
Ribbon motor drive voltage fine adjustment (Take-up) (PC)	0
Ribbon motor drive voltage fine adjustment (Feed) (PC)	0
Feed fine adjustment (Key)	0 mm
Cut (strip) position fine adjustment (Key)	0 mm
Reverse feed fine adjustment (Key)	0 mm
Print density fine adjustment: Thermal transfer print mode (Key)	0
Print density fine adjustment: Direct thermal print mode (Key)	0
Ribbon motor drive voltage fine adjustment	0

Parameter		Value
(Take-up) (Key)		
Ribbon motor drive voltage fine adjustment (Feed) (Key)		0
X-coordinate fine adjustment (Key)		0 mm
Transmissive sensor manual threshold fine adjustment value		1.4 V
Reflective sensor manual threshold fine adjustment value		1.0 V
Character code		PC-850
Character zero		“0” (without slash)
RS232C baud rate		9600 bps
RS232C data length		8 bits
RS232C stop bit length		1 bit
RS232C parity		NONE
RS232C flow control code		XON/XOFF + READY/BUSY (DTR) protocol: (XON output when the power is on, XOFF output when the power is off)
LCD language		English
Auto forward wait		OFF
Head up cut in cut issue mode		OFF (Not activated)
Ribbon saving function	B-SX6T	OFF (Not activated)
	B-SX8T	ON (Activated) (When the head lever is set to the tag position.)
Control code		Auto
Ribbon type		TRANS (Transparent ribbon)
Strip wait status		OFF
FEED key function		FEED (Feeds one label.)
KANJI code		TYPE1
EURO code		B0H
Auto print head check		OFF
Centronics ACK/BUSY timing		TYPE1
Web printer function		OFF (Disabled)
Media sensor		CENTER (Fixed sensor)
Input prime		OFF (Not performed)
Expansion I/O operation mode		Normal
Plug & Play		OFF
Label end/ribbon end		The printer stops an issue operation.
Pre-strip		OFF
Reverse feed speed		3 ips
MaxiCode specification		TYPE1 (Compatible with the current version)
Strip motor torque		R0 (For standard papers)
Stabilizer function		ON (Enabled only in direct thermal mode)
Automatic calibration		OFF
LAN enable/disable		LAN: Enable, SNMP: Enable
Status response		ON

Parameter		Value
Label pitch		76.2 mm
Effective print length		74.2 mm
Effective print width	B-SX6T	170.6 mm
	B-SX8T	213.3 mm
Print type		Thermal transfer print mode
Sensor type		Transmissive sensor
Feed speed		4”/sec.
Issue mode		Batch
PC-save automatic call		ON
BASIC interpreter setting		OFF
BASIC interpreter trace setting		OFF
DHCP setting		OFF
RFID module type selection		NONE
RFID tag type selection		NONE
RFID destination code setting		As per module setting
RFID error tag detection		OFF
Password setting to protect error tag detection		Disabled: 0000
Access password setting		00000000
Automatic unlock function setting		Disabled
Max. number of RFID issue retires		3
Max. number of RFID read retires		5
RFID read retry time-out		4.0 seconds
Max. number of RFID write retries		5
RFID write retry time-out		2.0 seconds
RFID adjustment for retry		OFF: 0 mm
RFID radio power level		18
RFID AGC threshold setting		0
Q value		0
AGC threshold for data write		0
Hibiki tag multi-word write		0: OFF
AGC threshold lower limit for retry		0
The number of times tag data write succeeded		0
The number of times tag data write failed		0
System mode password setting		OFF

6.8 IP ADDRESS SETTING

6.8.1 IP Address Setting Operation Example



(1) Power off state

(2) While holding the [FEED] and [PAUSE] keys down, turn the power on.

(3) The self-test menu is displayed.

(4) Press the [FEED] key.

(5) System mode menu display (Parameter setting)

(6) Press the [FEED] key.

(7) System mode menu display (Fine adjustment value setting)

(8) Press the [FEED] key.

(9) System mode menu display (Test print)

(10) Press the [FEED] key.

(11) System mode menu display (Sensor display/adjustment)

(12) Press the [FEED] key.

(13) System mode menu display (RAM clear)

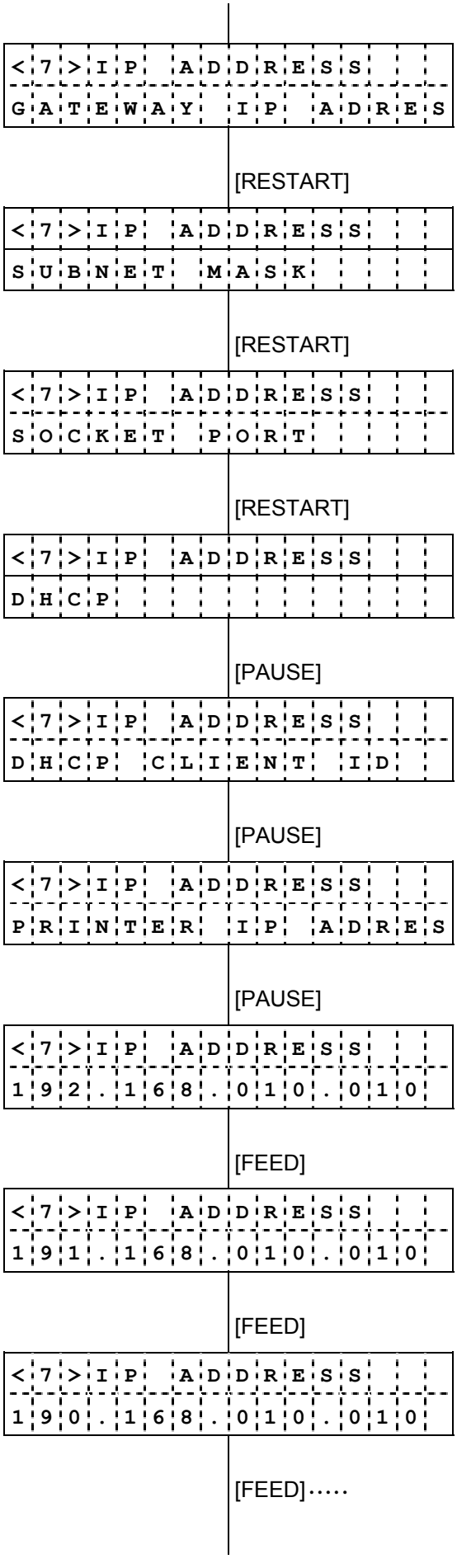
(14) Press the [FEED] key.

(15) System mode menu display (IP address setting)

(16) Press the [PAUSE] key.

(17) Printer IP address setting mode

(18) Press the [RESTART] key.



(19) Gateway IP address setting mode

(20) Press the [RESTART] key.

(21) Subnet mask setting mode

(22) Press the [RESTART] key.

(23) Socket port number setting mode

(24) Press the [RESTART] key.

(25) DHCP function setting mode

(26) Press the [PAUSE] key.

(27) DHCP client ID setting mode

(28) Press the [PAUSE] key.

(29) Printer IP address setting mode

(30) Press the [PAUSE] key.

(31) Printer IP address display

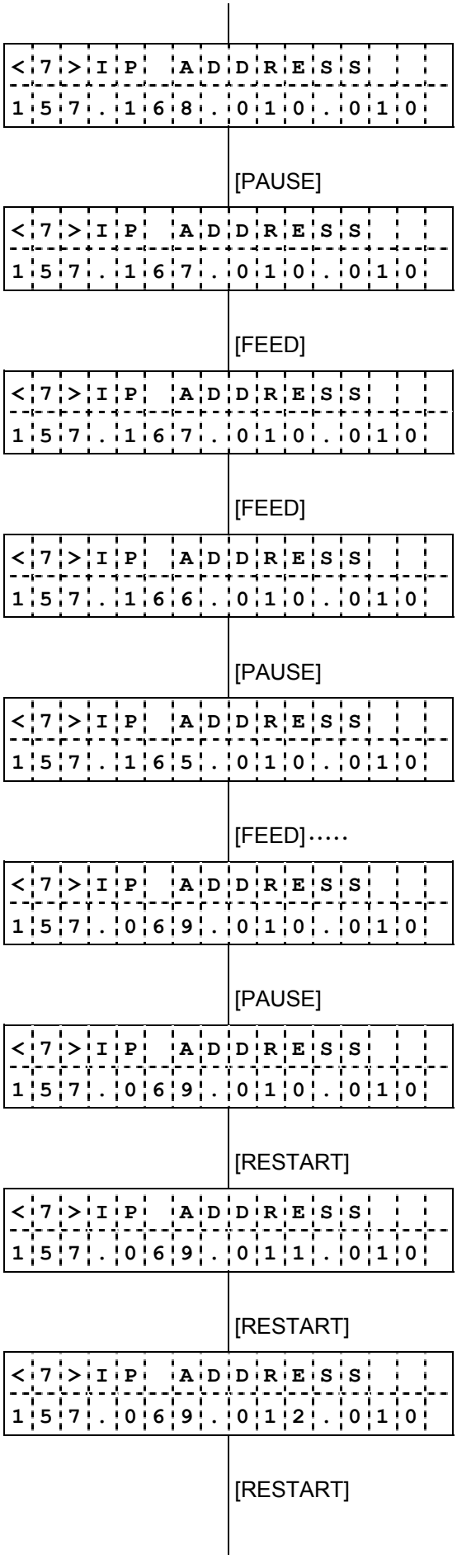
(32) Press the [FEED] key.

(33) Setting for the first 8 bits

(34) Press the [FEED] key.

(35) Setting for the first 8 bits

(36) Press the [FEED] key.



(37) Setting for the first 8 bits

(38) Press the [PAUSE] key.

(39) The first 8 bits are entered and the setting goes on to the next 8 bits.

(40) Press the [FEED] key.

(41) Setting for the next 8 bits

(42) Press the [FEED] key.

(43) Setting for the next 8 bits

(44) Press the [PAUSE] key.

(45) Setting for the next 8 bits

(46) Press the [FEED] key.

(47) Setting for the next 8 bits

(48) Press the [PAUSE] key.

(49) The 8 bits are entered and the setting goes on to the next 8 bits.

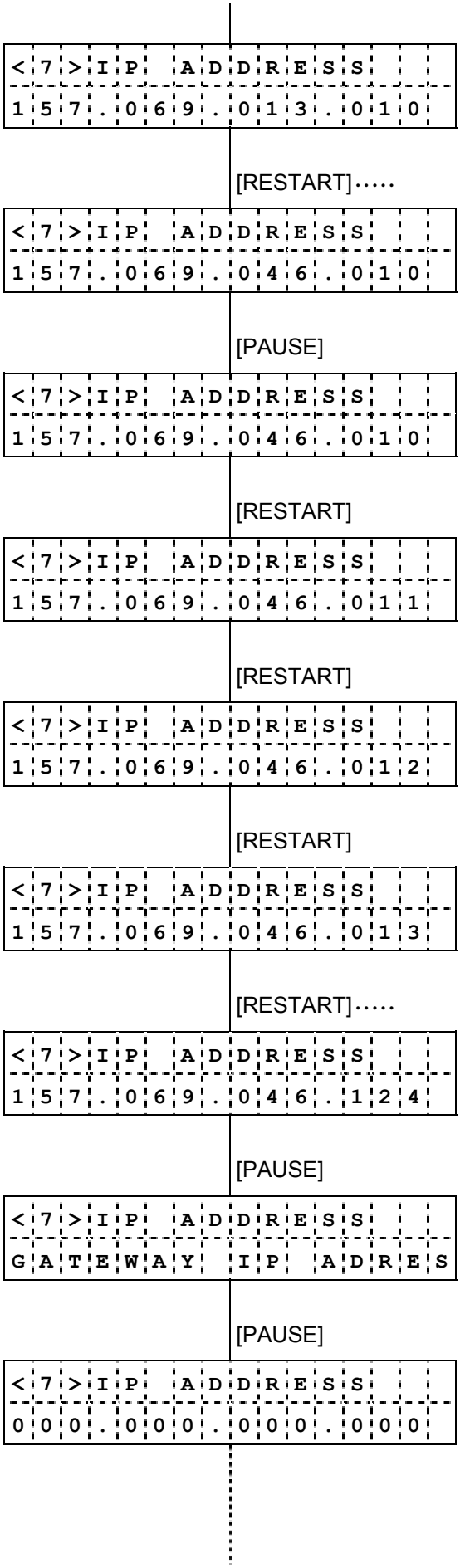
(50) Press the [RESTART] key.

(51) Setting for the next 8 bits

(52) Press the [RESTART] key.

(53) Setting for the next 8 bits

(54) Press the [RESTART] key.



(55) Setting for the next 8 bits

(56) Press the [RESTART] key.

(57) Setting for the next 8 bits

(58) Press the [PAUSE] key.

(59) The 8 bits are entered and the setting goes on to the next 8 bits.

(60) Press the [RESTART] key.

(61) Setting for the next 8 bits

(62) Press the [RESTART] key.

(63) Setting for the next 8 bits

(64) Press the [RESTART] key.

(65) Setting for the next 8 bits

(66) Press the [RESTART] key.

(67) Setting for the next 8 bits

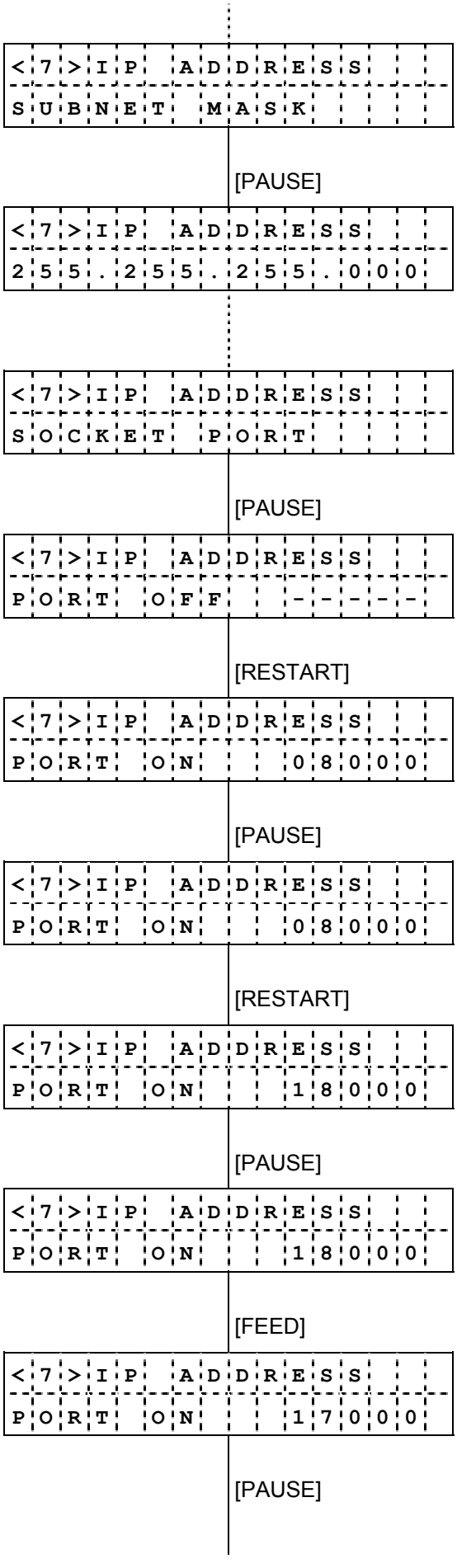
(68) Press the [PAUSE] key.

(69) Gateway IP address setting mode

(70) Press the [PAUSE] key.

(71) Gateway IP address display

(72) Gateway IP address setting



(73) Subnet mask setting mode

(74) Press the [PAUSE] key.

(75) Subnet mask display

(76) Subnet mask setting

(77) Socket communication port setting mode

(78) Press the [PAUSE] key.

(79) Socket communication setting (Disabled)

(80) Press the [RESTART] key.

(81) Socket communication setting (Enabled)

(82) Press the [PAUSE] key.

(83) Set a value for the 5th digit.

(84) Press the [RESTART] key.

(85) Confirm a set value for the 5th digit.

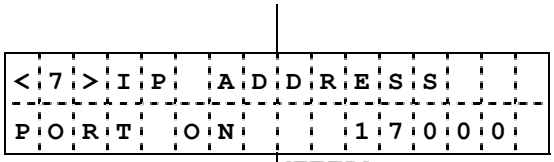
(86) Press the [PAUSE] key.

(87) Set a value for the 4th digit.

(88) Press the [FEED] key.

(89) Confirm a set value for the 4th digit.

(90) Press the [PAUSE] key.



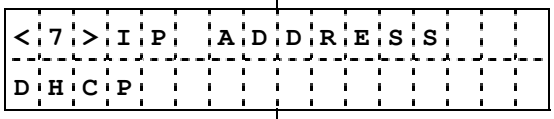
(91) Enter values for the 3rd to the 1st digits.

[FEED]·····

[RESTART]·····

(92) Set values for the 3rd to the 1st digits.

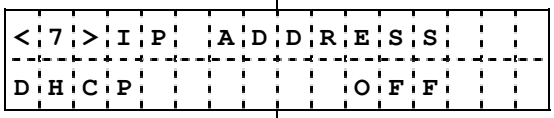
[PAUSE]·····



(93) DHCP setting

[PAUSE]

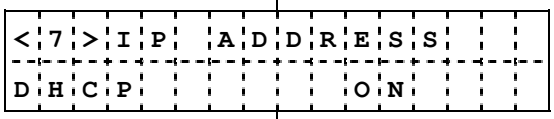
(94) Press the [PAUSE] key.



(95) DHCP setting (Disabled)

[RESTART]

(96) Press the [RESTART] key.



(97) DHCP setting (Enabled)

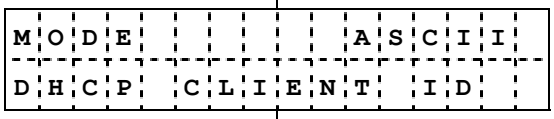
[PAUSE]

(98) Press the [PAUSE] key.

(99) DHCP client ID setting

[PAUSE]

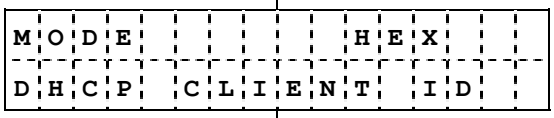
(100) Press the [PAUSE] key.



(101) DHCP client ID input mode setting (ASCII)*

[RESTART]

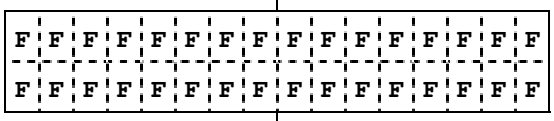
(102) Press the [RESTART] key.



(103) DHCP client ID input mode setting (HEX)

[PAUSE]

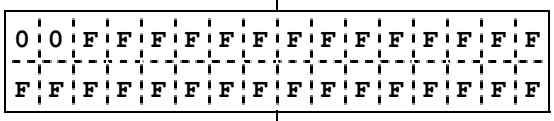
(104) Press the [PAUSE] key.



(105) Input the DHCP client ID. (HEX)

[RESTART]

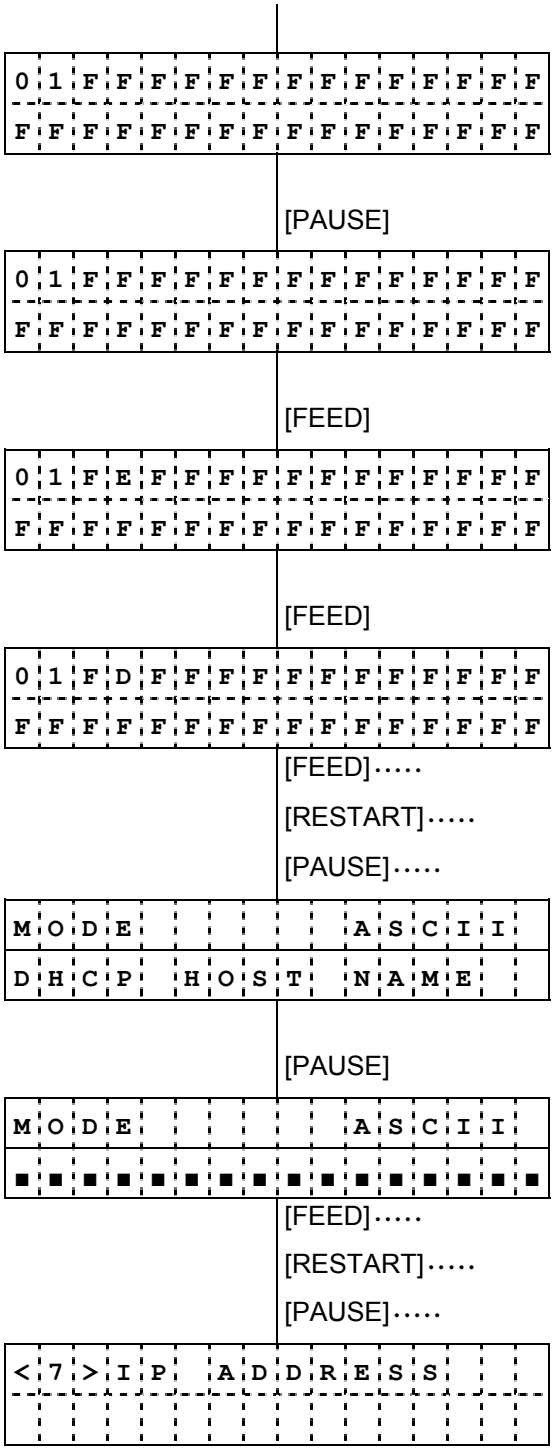
(106) Press the [RESTART] key.



(107) Input the DHCP client ID. (HEX: 1st byte)

[RESTART]

(108) Press the [RESTART] key.



(109) Input the DHCP client ID. (HEX: 1st byte)

(110) Press the [PAUSE] key.

(111) Input the DHCP client ID. (HEX: 2nd byte)

(112) Press the [FEED] key.

(113) Input the DHCP client ID. (HEX: 2nd byte)

(114) Press the [FEED] key.

(115) Input the DHCP client ID. (HEX: 2nd byte)

(116) Input the DHCP client ID. (HEX: 2nd to 16 th bytes)

(117) Input the DHCP host name.

(118) Press the [PAUSE] key.

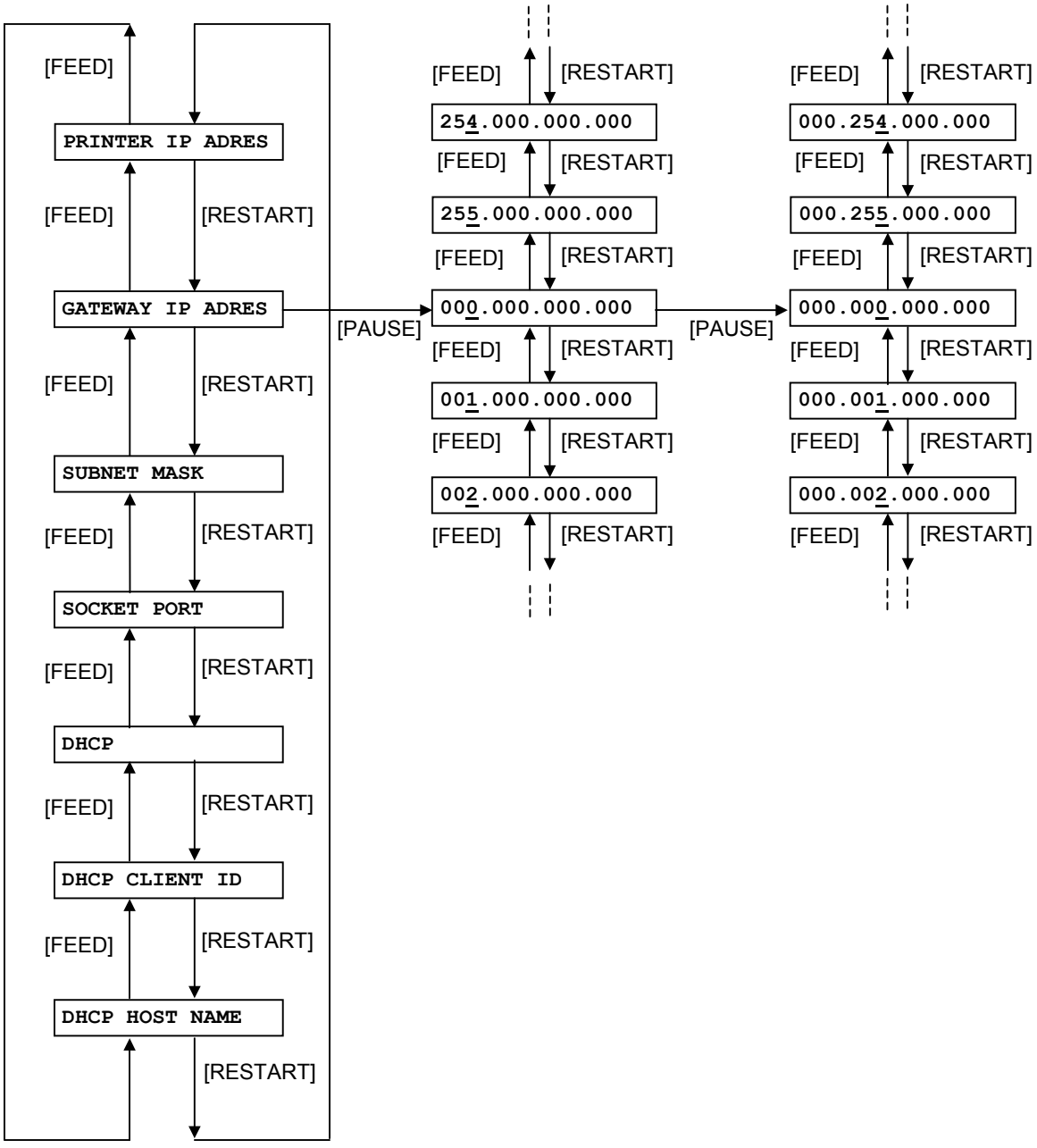
(119) DHCP HOST NAME input mode setting (ASCII) *

(120) Press the [RESTART] key.

(121) End of IP address setting

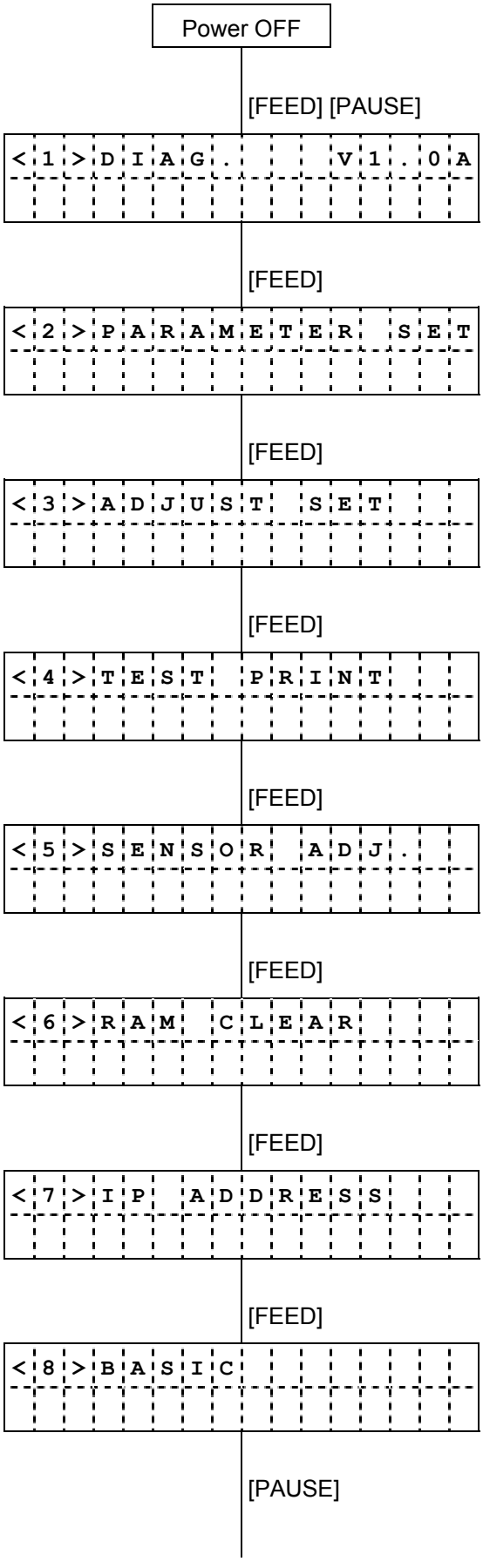
NOTE: *When the input mode for DHCP client ID and DHCP HOST NAME is ASCII, each byte of data is an ASCII character. Termination is FHH. It is "FF" in HEX mode and "■" before the space in ASCII mode.*

6.8.2 IP Address Setting Operation Flow



6.9 BASIC SETTING

6.9.1 BASIC Setting Operation Example



(1) Power off state

(2) While holding the [FEED] and [PAUSE] keys down, turn the power on.

(3) The self-test menu is displayed.

(4) Press the [FEED] key.

(5) System mode menu display (Parameter setting)

(6) Press the [FEED] key.

(7) System mode menu display (Fine adjustment value setting)

(8) Press the [FEED] key.

(9) System mode menu display (Test print)

(10) Press the [FEED] key.

(11) System mode menu display (Sensor display/adjustment)

(12) Press the [FEED] key.

(13) System mode menu display (RAM clear)

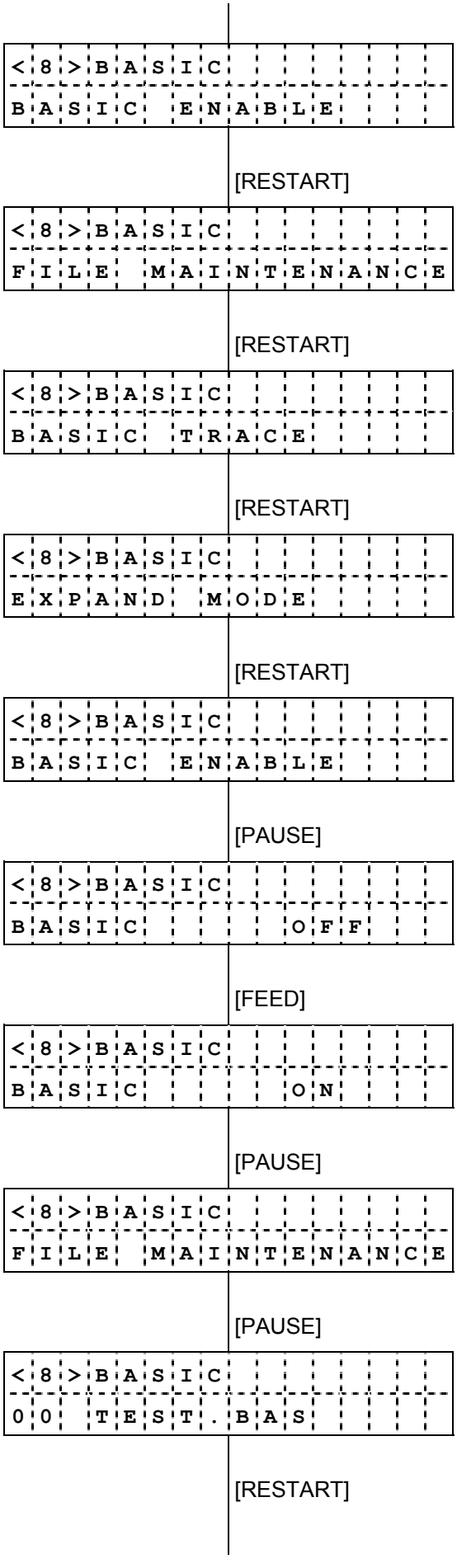
(14) Press the [FEED] key.

(15) System mode menu display (IP address setting)

(16) Press the [FEED] key.

(17) BASIC setting mode

(18) Press the [PAUSE] key.



(19) BASIC enable setting mode

(20) Press the [RESTART] key.

(21) BASIC file browser

(22) Press the [RESTART] key.

(23) BASIC trace setting

(24) Press the [RESTART] key.

(25) BASIC expansion mode

(26) Press the [RESTART] key.

(27) BASIC enable setting mode

(28) Press the [PAUSE] key.

(29) BASIC is disabled.

(30) Press the [FEED] key.

(31) BASIC is enabled.

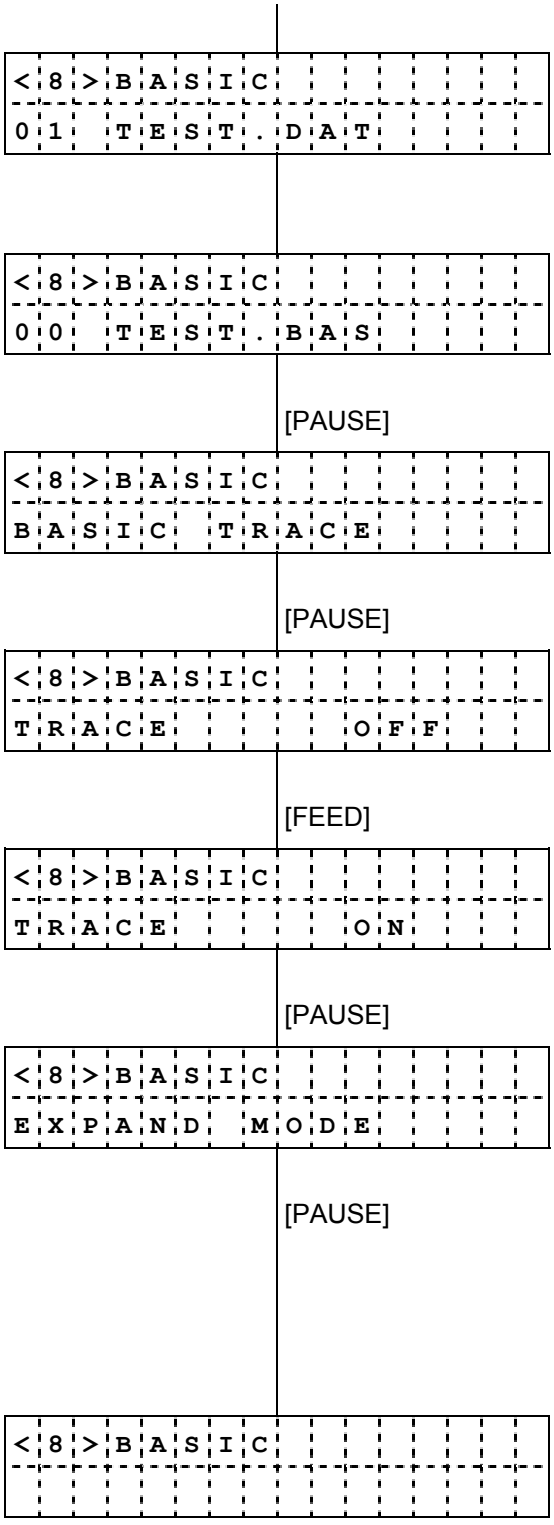
(32) Press the [PAUSE] key.

(33) BASIC file browser

(34) Press the [PAUSE] key.

(35) Program file display

(36) Press the [RESTART] key.



(37) Data file display

(38) Names of data files, saved in the BASIC file area, are displayed.

(39) Program file display

(40) Press the [PAUSE] key.

(41) BASIC trace setting

(42) Press the [PAUSE] key.

(43) BASIC trace setting (Disabled)

(44) Press the [FEED] key.

(45) BASIC trace setting (Enabled)

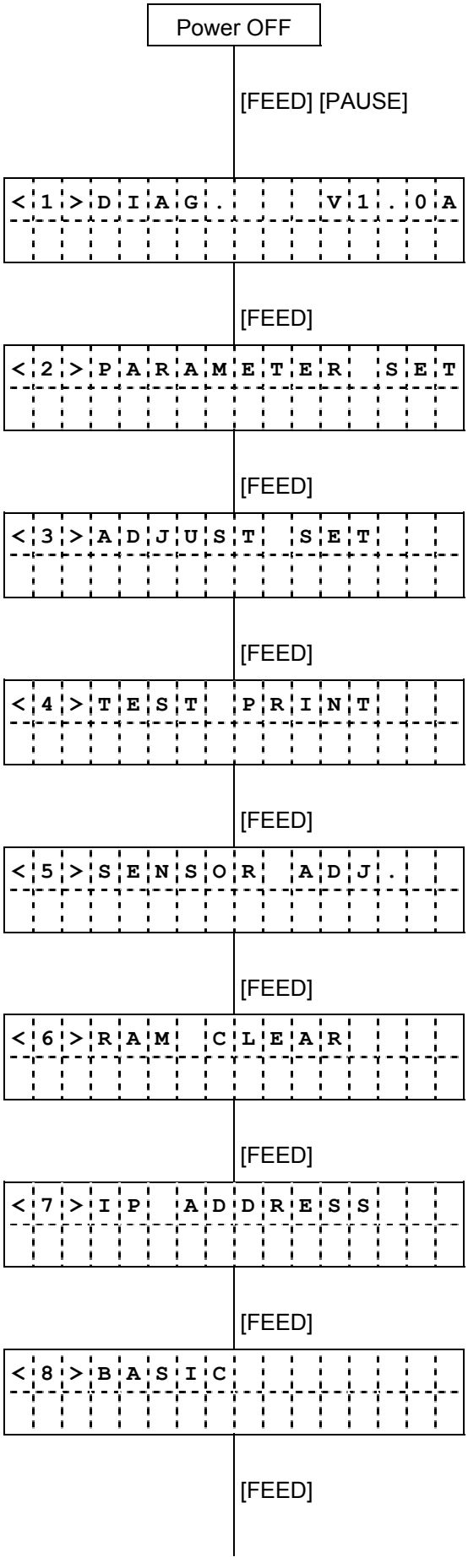
(46) Press the [PAUSE] key.

(47) BASIC expansion mode

(48) Press the [PAUSE] key to execute the BASIC expansion mode program, if it has been loaded.
The basic expansion mode ends when the basic expansion program is exited.

(49) BASIC setting mode

6.10 ADJUSTMENT MODE FOR FACTORY



(1) While holding the [FEED] and [PAUSE] keys down, turn the power on.

(2) The self-test menu is displayed.

(3) Press the [FEED] key.

(4) System mode menu display (Parameter setting)

(5) Press the [FEED] key.

(6) System mode menu display (Fine adjustment value setting)

(7) Press the [FEED] key.

(8) System mode menu display (Test print)

(9) Press the [FEED] key.

(10) System mode menu display (Sensor display/adjustment)

(11) Press the [FEED] key.

(12) System mode menu display (RAM clear)

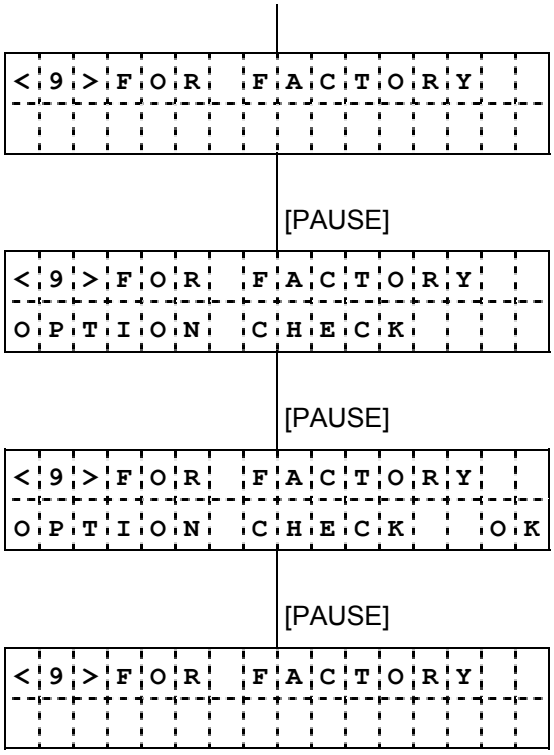
(13) Press the [FEED] key.

(14) System mode menu display (IP address setting)

(15) Press the [FEED] key.

(16) System mode menu display (BASIC setting)

(17) Press the [FEED] key.



(18) The menu for the adjustment mode for the factory is displayed.

(19) Press the [PAUSE] key.

(20) Option check mode display

(21) Press the [PAUSE] key.

(22) Option check result display

(23) Press the [PAUSE] key.

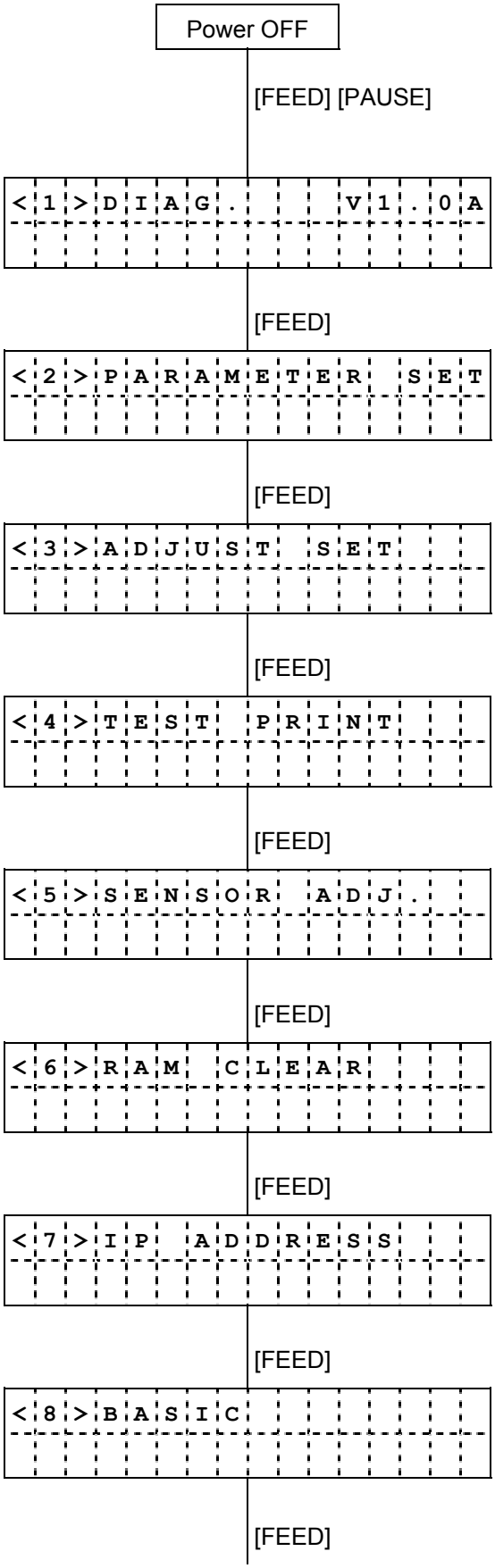
(24) The display is returned to the menu for the adjustment for the factory.

NOTE: *Option Check*

Currently no option checks and fixed to OK.

6.11 RFID SETTING

6.11.1 RFID Setting Operation Example



(1) Power off state

(2) While holding the [FEED] and [PAUSE] keys down, turn the power on.

(3) The self-test menu is displayed.

(4) Press the [FEED] key.

(5) System mode menu display (Parameter setting)

(6) Press the [FEED] key.

(7) System mode menu display (Fine adjustment value setting)

(8) Press the [FEED] key.

(9) System mode menu display (Test print)

(10) Press the [FEED] key.

(11) System mode menu display (Sensor display/adjustment)

(12) Press the [FEED] key.

(13) System mode menu display (RAM clear)

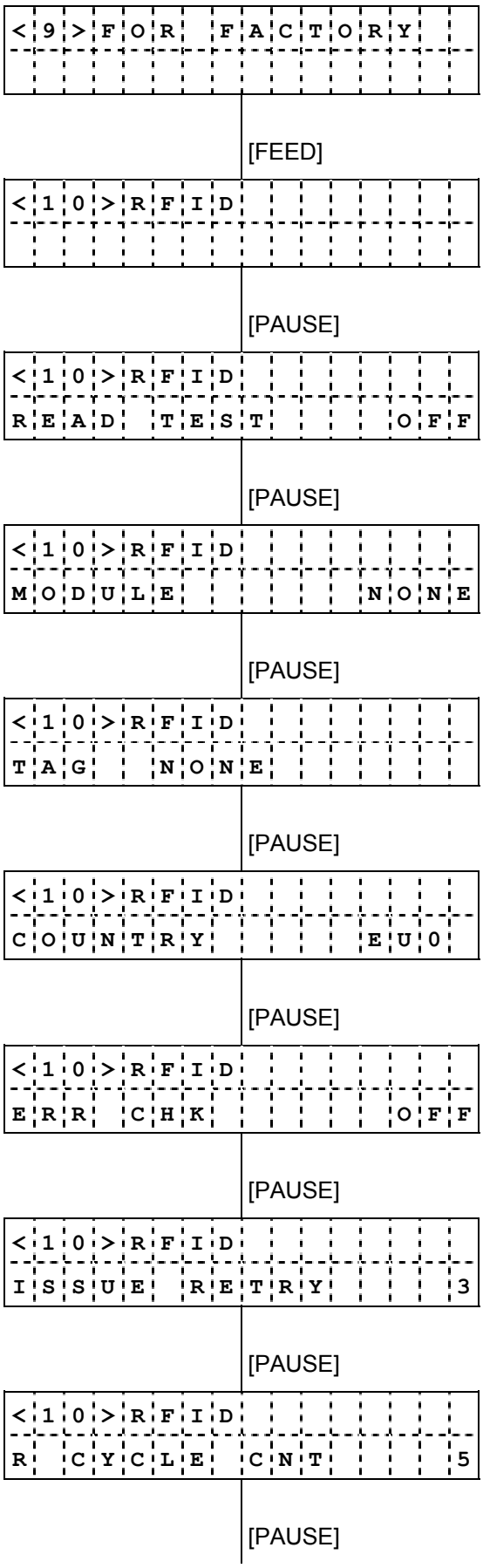
(14) Press the [FEED] key.

(15) System mode menu display (IP address setting)

(16) Press the [FEED] key.

(17) System mode menu display (BASIC setting)

(18) Press the [FEED] key.



(19) The menu for the adjustment mode for the factory is displayed.

(20) Press the [FEED] key.

(21) RFID setting menu display

(22) Press the [PAUSE] key.

(23) RFID read test menu
Enable/Disable the read test by using the [FEED] or [RESTART] key.

(24) Press the [PAUSE] key.

(25) RFID module type setting
Select a type by using the [FEED] or [RESTART] key.

(26) Press the [PAUSE] key.

(27) RFID tag type setting
Select a tag type by using the [FEED] or [RESTART] key.

(28) Press the [PAUSE] key.

(29) RFID destination code setting (U2 module only)
Select a destination code by using the [FEED] or [RESTART] key.

(30) Press the [PAUSE] key.

(31) RFID error tag detection
Enable/Disable the detection by using the [FEED] or [RESTART] key.

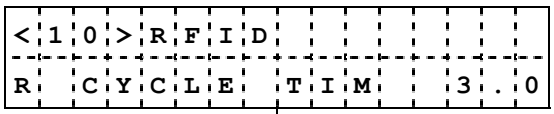
(32) Press the [PAUSE] key.

(33) Maximum number of RFID issue retries
Set a value by using the [FEED] or [RESTART] key.

(34) Press the [PAUSE] key.

(35) Maximum number of RFID read retries
Set a value by using the [FEED] or [RESTART] key.

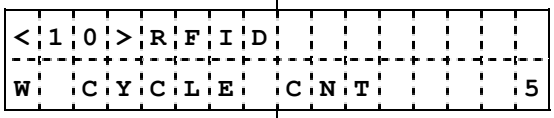
(36) Press the [PAUSE] key.



(37) RFID read retry time-out
Set a value by using the [FEED] or [RESTART] key.

[PAUSE]

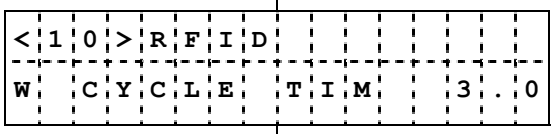
(38) Press the [PAUSE] key.



(39) Maximum number of RFID write retries
Set a value by using the [FEED] or [RESTART] key.

[PAUSE]

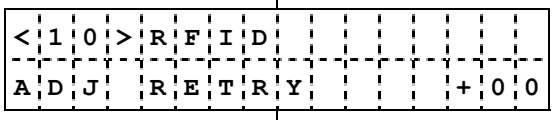
(40) Press the [PAUSE] key.



(41) RFID write retry time-out
Set a value by using the [FEED] or [RESTART] key.

[PAUSE]

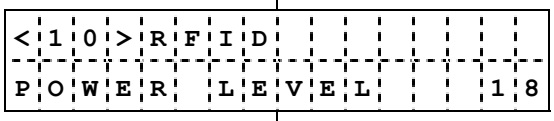
(42) Press the [PAUSE] key.



(43) RFID adjustment for retry
Set a value by using the [FEED] or [RESTART] key.

[PAUSE]

(44) Press the [PAUSE] key.



(45) RFID wireless power level setting
Set a value by using the [FEED] or [RESTART] key.

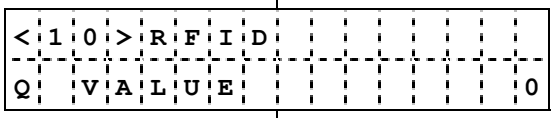
[PAUSE]

(46) Press the [PAUSE] key.

(47) RFID AGC threshold setting
Set a value by using the [FEED] or [RESTART] key.

[PAUSE]

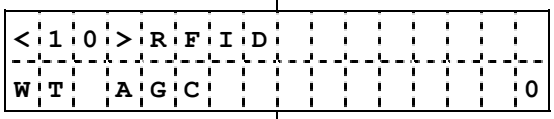
(48) Press the [PAUSE] key.



(49) Q value setting
Set a value by using the [FEED] or [RESTART] key.

[PAUSE]

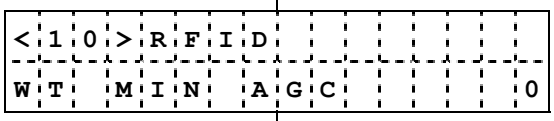
(50) Press the [PAUSE] key.



(51) AGC threshold for data write
Set a value by using the [FEED] or [RESTART] key.

[PAUSE]

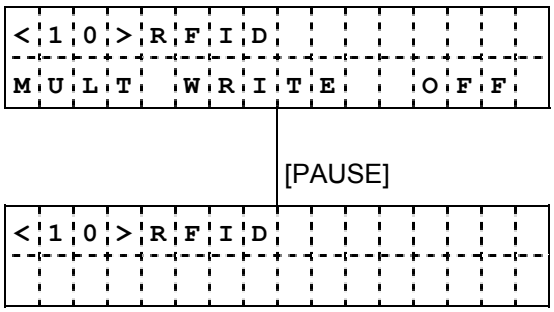
(52) Press the [PAUSE] key.



(53) AGC threshold lower limit for retry
Set a value by using the [FEED] or [RESTART] key.

[PAUSE]

(54) Press the [PAUSE] key.



(55) Hibiki tag multi-word write
Enable/disable the function by using the [FEED] or [RESTART] key.

(56) Press the [PAUSE] key.

(57) RFID setting menu display

6.11.2 Details of RFID Setting

(1) RFID read test

OFF: A read test is not performed.

ON: The printer enters read test mode, and a read test is performed each time the [PAUSE] key is pressed. The read data on the tag is displayed on the LCD.
If the tag cannot be read, “RFID TIMEOUT” or “RFID READ ERROR” is displayed.
Only the tags selected by the RFID tag type selection can be read. An RFID tag read error will result if the type of the tag to be read and the type of the tag selected by the RFID tag type selection do not match. Make sure the RFID tag type has been selected before the read test is started.

LCD can display up to 16 digits x 2 lines data.

- In the case the Q value is set to 0.

```
1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6
6 5 4 3 2 1 0 9 8 7 6 5 4 3 2 1
```

- In the case the Q value is set to 1 or greater.

```
1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6
6 5 4 3 2 1 0 9           (0E)
```

The data, displayed in hex. numbers. Displayed data is an EPC code in the EPC area.
When the RFID tag contains data of 16 digits or more, the first 16 digits are displayed. When data volume is less than 16 digits, the vacant digits will be filled with spaces.

In the case the Q value is set to 1 or greater, the AGC value of a read tag, enclosed with parentheses, is displayed on the right most place on the lower line. Therefore, 14-byte data is displayed in hex. code.
Additionally, if more than one tag is read at one time, especially when short-pitch tags are used, pressing the [FEED] or [RESTART] key shows the other tags’ data. Among them, a tag with the highest AGC value is considered to be positioned just above the antenna.

When the RFID module type is set to “NONE” or a communication cannot be established, a message, “NO RFID MODULE”, is displayed.

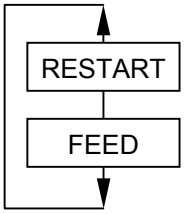
(2) RFID module type

NONE: No RFID kits are installed.

U2: The RFID kit for UHF band (B-SX708-RFID-U2-∗∗-R) is installed.

(3) RFID tag type selection

① When the RFID module type is set to “U2”:



- NONE: (When a tag type is not selected.)
- EPC C1 Gen2: 24

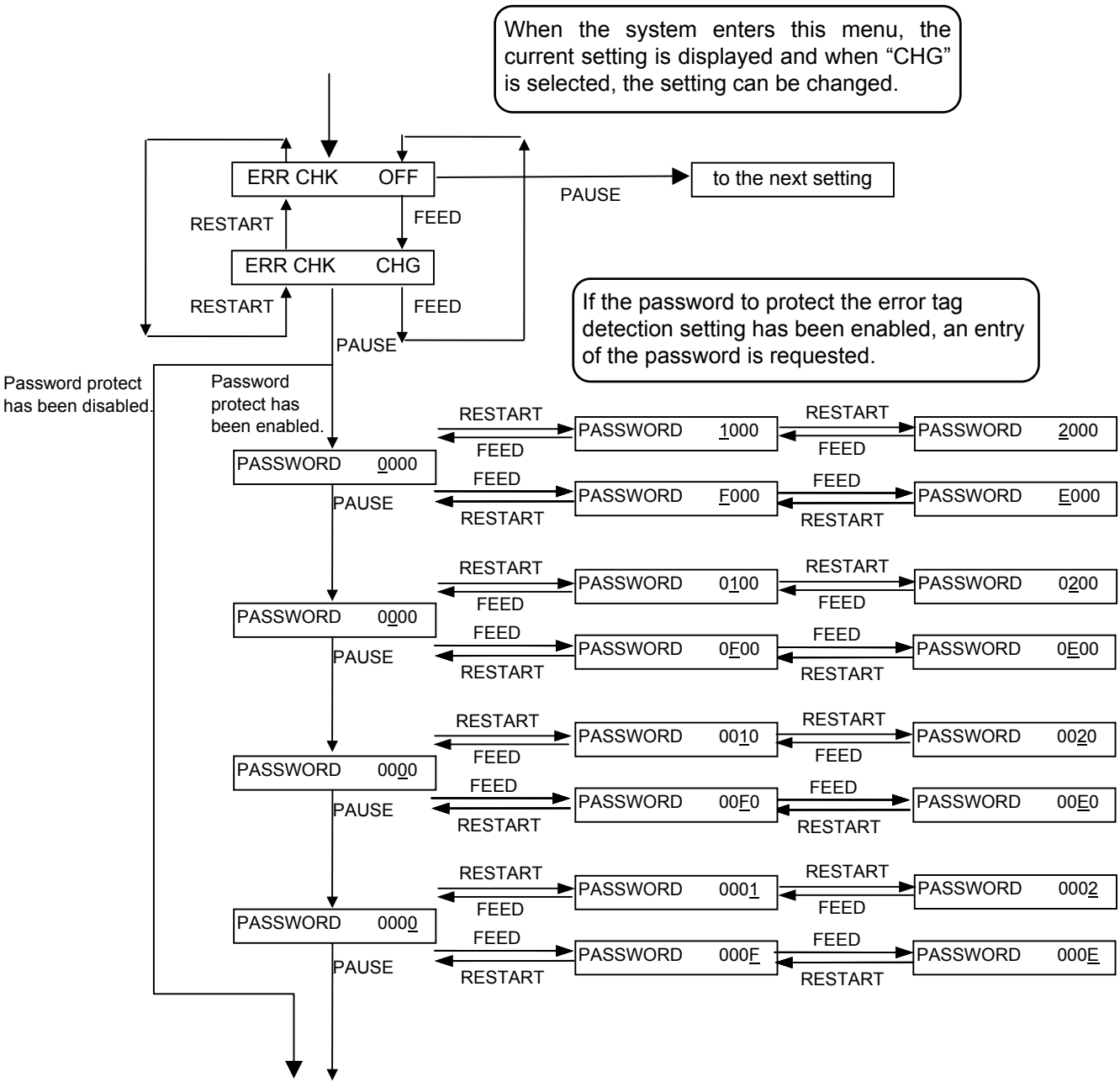
(4) RFID error tag detection

EPC: An error tag detection is performed. A tag (EPC area for Gen2 tags) is read before writing data on it and data is written on the tag only when the header data is “A5A5”.

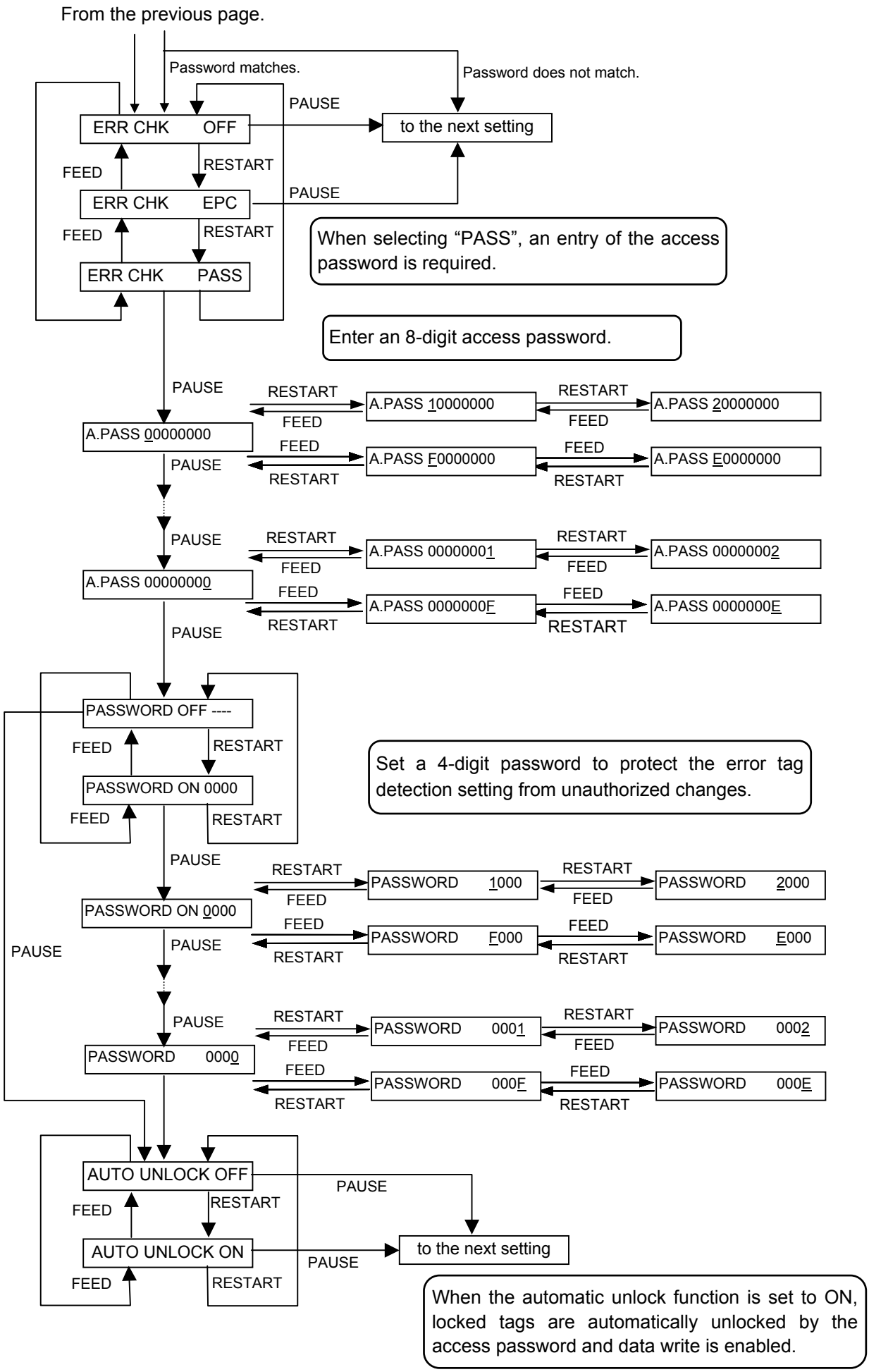
OFF: An error tag detection is not performed. Though a tag is read before writing data on it, data is always written on the tag whatever data is set as the header data.

PASS: An error tag detection is performed only for Gen2 tags. The access password area of a tag is read before writing data on it. Only when the data read matches the access password setting data, the data is written on the tag.

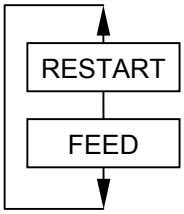
To prevent unauthorized changes of the setting, a password to protect the error tag detection setting can be programmed.



Go to the next page.


From the previous page.
Password matches.
Password does not match.
PAUSE
ERR CHK OFF
to the next setting
FEED
RESTART
ERR CHK EPC
PAUSE
FEED
RESTART
ERR CHK PASS
When selecting “PASS”, an entry of the access password is required.
Enter an 8-digit access password.
PAUSE
RESTART
FEED
A.PASS 10000000
A.PASS 20000000
A.PASS 00000000
A.PASS F0000000
A.PASS E0000000
A.PASS 00000001
A.PASS 00000002
A.PASS 00000000
A.PASS 0000000F
A.PASS 0000000E
PASSWORD OFF ----
PASSWORD ON 0000
Set a 4-digit password to protect the error tag detection setting from unauthorized changes.
PASSWORD ON 0000
PASSWORD 1000
PASSWORD 2000
PASSWORD F000
PASSWORD E000
PASSWORD 0001
PASSWORD 0002
PASSWORD 0000
PASSWORD 000F
PASSWORD 000E
AUTO UNLOCK OFF
AUTO UNLOCK ON
to the next setting
When the automatic unlock function is set to ON, locked tags are automatically unlocked by the access password and data write is enabled.

(5) Maximum number of RFID issue retries



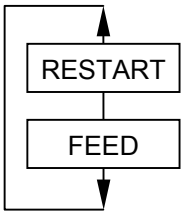
• +
• Initial value (3)
• –

0 to 255

Set a maximum number of retry times to issue an RFID tag.

If the printer fails to issue an RFID tag, it prints an error pattern and starts retrying to issue the tag for up to a specified number of times. If the printer does not succeed even after having retried for the maximum number of times, the printer stops, resulting in an error.

(6) Maximum number of RFID read retries



• +
• Initial value (5)
• –

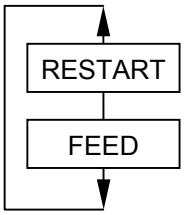
0 to 255

Set a maximum number of retry times to read an RFID tag.

The printer stops retrying to read data from an RFID tag before the maximum number of retry times is reached, if a specified time runs out.

The printer always read the RFID tag for a maximum number of retry times set by this parameter before writing data to the RFID.

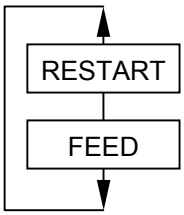
(7) RFID read retry time-out



• +
• Initial value (4.0)
• −

0.0 to 9.9 (0.0 seconds to 9.9 seconds)
Set a time-out for retry to read an RFID tag.
The printer stops retrying to read data from an RFID tag before a specified time runs out, if a maximum number of retry times is reached.
The printer always read the RFID tag for a specified time set by this parameter before writing data to the RFID.

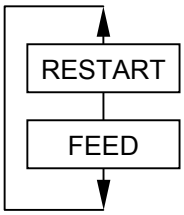
(8) Maximum number of RFID write retries



• +
• Initial value (5)
• −

0 to 255
Set a maximum number of retry times to write data onto an RFID tag.
The printer stops retrying to write data to an RFID tag before the maximum number of retry times is reached, if a specified time runs out.

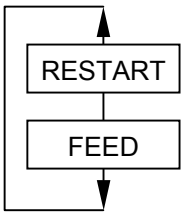
(9) RFID write retry time-out



• +
• Initial value (2.0)
• −

0.0 to 9.9 (0.0 seconds to 9.9 seconds)
Set a time-out for retry to write data to an RFID tag.
The printer stops retrying to write data to an RFID tag before a specified time runs out, if a maximum number of retry times is reached.

(10) RFID adjustment for retry

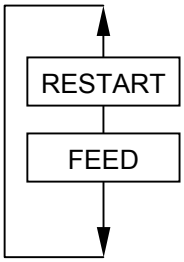


- +
- Initial value (+00)
- −

−99 mm to +99 mm
+: Forward feed −: Reverse feed

Set a value to feed an RFID tag.
If the printer fails to write data to an RFID tag, the printer feeds the RFID tag forward or backward for a specified length, then starts retrying to write data, unless “0” is set for this parameter where no retries are to be performed.
The setting is effective only when the parameter value is −3 mm or less or +3 mm or more.

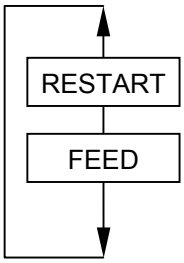
(11) Radio output power level



- 18
- 9
- Initial value (18)
- 18
- 9

9 to 18
When the value is “9”, the power is the weakest and when “18”, the power is the strongest. The factory default is 18.
The optimal value is different depending on the tags used. Usually it is not necessary to change this value but changing the value sometimes can increase the number of successful read/write times.

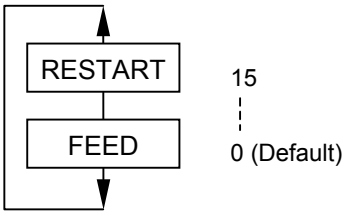
(12) RFID AGC threshold setting



- 15
- 1
- Initial value (0)
- 15
- 1

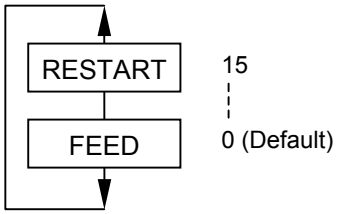
0 to 15
Obtains the gain of the RFID tag, and when that gain is lower than the AGC threshold, tags are considered as error tags even if a data write succeeds.
When the AGC threshold is se to “0”, all tags are writable. When set to 8, for example, only tags with the AGC threshold level set to 9 or greater are writable.
The optimal value is different depending on the tags. The factory default is 0.

(13) Q value



0 to 15
In the case multiple RFID tags are read at the same time, this menu is useful to pinpoint a target tag.
Set the Q value to “1” or greater (2 is recommended.). Q value “0” causes the tags to interfere with each other and disables proper data write.
When a Q value is set, set an AGC threshold for data write and an AGC threshold lower limit for retry, also. Setting all these values enable writing data to a tag placed just above the antenna.
However, the problem that multiple tags are read at the same time does not occur on the B-SX series with most RFID tag types. It is not necessary to change the default setting.

(14) AGC threshold for data write



0 to 15
When the Q value is set to 1 or greater, the AGC threshold for data write becomes effective. When the obtained gain of an RFID tag is lower than the AGC threshold for data write, a data write operation is not performed. In other words, setting an AGC threshold for data write enables writing data only to a tag placed just above the antenna.

Supposing that the gain of a tag just above the antenna is 14 and that of a tag off the antenna is 7, setting the threshold to 11 (a value between 8 and 14) enables the printer to write data only to the tag just above the antenna.
When the threshold is set to 0, a data write operation is performed regardless of the gain of a tag.

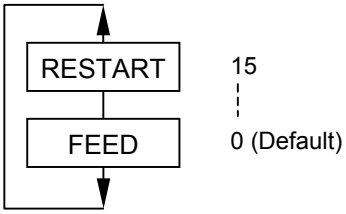
Both of the AGC threshold and the AGC threshold for data write are used to determine whether a tag is defective or not, but the timing of a gain measurement is different. In the case of the AGC threshold, this is performed after data is written to a tag.

On the contrary, when the AGC threshold for data write is effective a measurement is performed before data is written. And if a gain value is lower than the threshold, a data write operation is not performed.

The optimum value differs depending on the tag type.

However, the problem that multiple tags are read at the same time does not occur on the B-SX series with most RFID tag types. It is not necessary to change the default setting.

(15) AGC threshold lower limit for retry



0 to 15
When the Q value is set to 1 or greater, the AGC threshold lower limit for retry becomes effective.
Even if a tag's gain is lower than the AGC threshold for data write, a data write to the tag may be successful in a retry if the gain is greater than the lower limit. For a retry, the printer lowers the threshold to the highest gain of the tag if it is greater than the lower limit or to the lower limit if it is greater than the highest gain of the tag.

Example 1

AGC threshold for data write: 11
Lower limit for retry: 9
Detected tag's gain: 10

As the gain of the tag is lower than the threshold, a data write operation is not performed for this tag at the first try. However, the gain is greater than the lower limit.
Then the printer retires to write data to this tag according to a new AGC threshold of 10.
In this case, a retry of a data write will mostly succeed because the detected tag's gain is greater than the new threshold. (However, the success rate is not 100% because a gain of a tag is not always the same.)

Example 2

AGC threshold for data write: 11
Lower limit for retry: 9
Detected tag's gain: 8

As the gain of the tag is lower than the threshold, a data write operation is not performed for this tag at the first try. Also, the gain is lower than the lower limit.
Then the printer retries to write data to this tag according to a new AGC threshold of 9.
In this case, a retry of data write will mostly fail because the detected tag's gain is lower than the new threshold. (However, the error rate is not 100% because a gain of a tag is not always the same.)

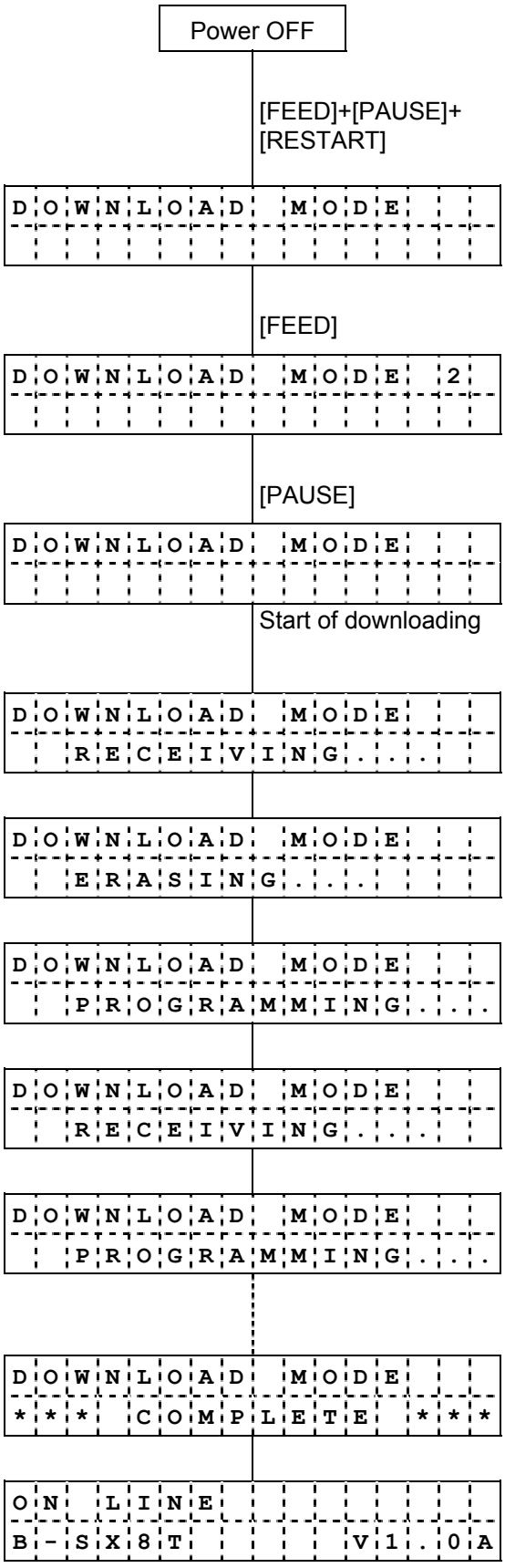
When the same value is set to the AGC threshold for data write and the AGC threshold lower limit for retry, respectively, the threshold will not be changed for a retry.
The optimum value differs depending on the tag type.

However, the problem that multiple tags are read at the same time does not occur on the B-SX series with most RFID tag types. It is not necessary to change the default setting.

(16) Hibiki tag multi-word write

Gen2-compatible Hibiki tag (HITACHI) has a function which reduces the time to write data on the RFID chips. This is called "Multi-word write". Use of this function enables a speed-up of the data write operation. However, this function is unique to the Hibiki tag, and not usable with the other Gen2-compatible chips. The factory default is set to OFF (disabled).

7. DOWNLOAD MODE



(1) Power off state

(2) Turn the power on by pressing the [FEED], [RESTART] and [PAUSE] keys at the same time.

(3) Download mode display

(4) Press the [FEED] key.

(5) Download mode 2 display

(6) Press the [PAUSE] key.

(7) Download mode display

(8) A download command is sent.

(9) A message, indicating data is being received, is displayed.

(10) A message, indicating data in flash ROM is being erased, is displayed.

(11) A message, indicating downloaded data is being written, is displayed.

(12) A message, indicating data is being received, is displayed.

(13) A message, indicating downloaded data is being written, is displayed.

.
.
.

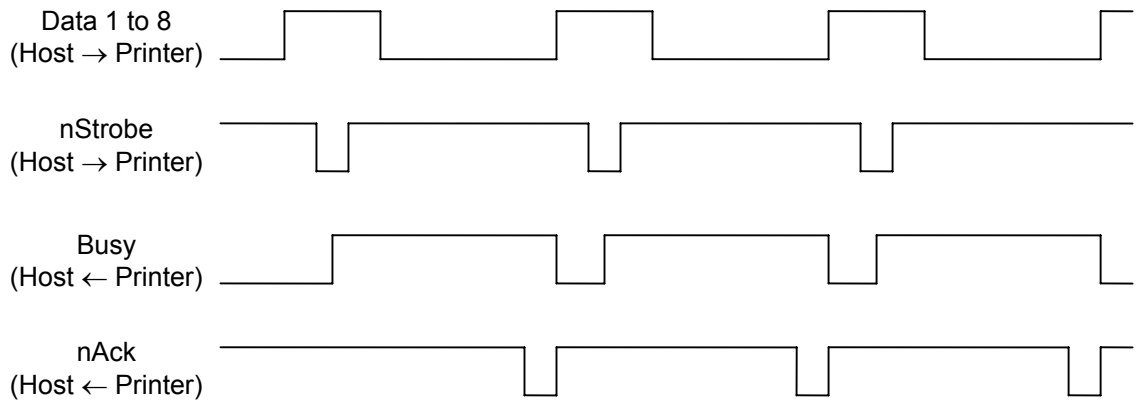
(14) Downloading is completed.

(15) After downloading is completed, the printer will be automatically rebooted, then it will enter online state.

When the power is turned on while the [FEED], [RESTART], and [PAUSE] keys are pressed at the same time, the printer enters download mode.
In download mode, only commands concerning downloading are available.
The printer keys function only to change a mode between “DOWNLOAD MODE” and “DOWNLOAD MODE 2”. A Centronics ACK-BUSY timing differs between “DOWNLOAD MODE” and “DOWNLOAD MODE 2”. When downloading is not performed properly in “DOWNLOAD MODE”, it may be performed properly in “DOWNLOAD MODE 2”.

Either of the following two types of BUSY/ACK timing is available:

(1) DOWNLOAD MODE (Default)



(2) DOWNLOAD MODE 2