TOSHIBA

TOSHIBA Bar Code Printer

B-852-TS22-QQ/QP-R

Key Operation Specification

First Edition: March 24, 2006

TOSHIBA TEC CORPORATION

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1. SCOPE

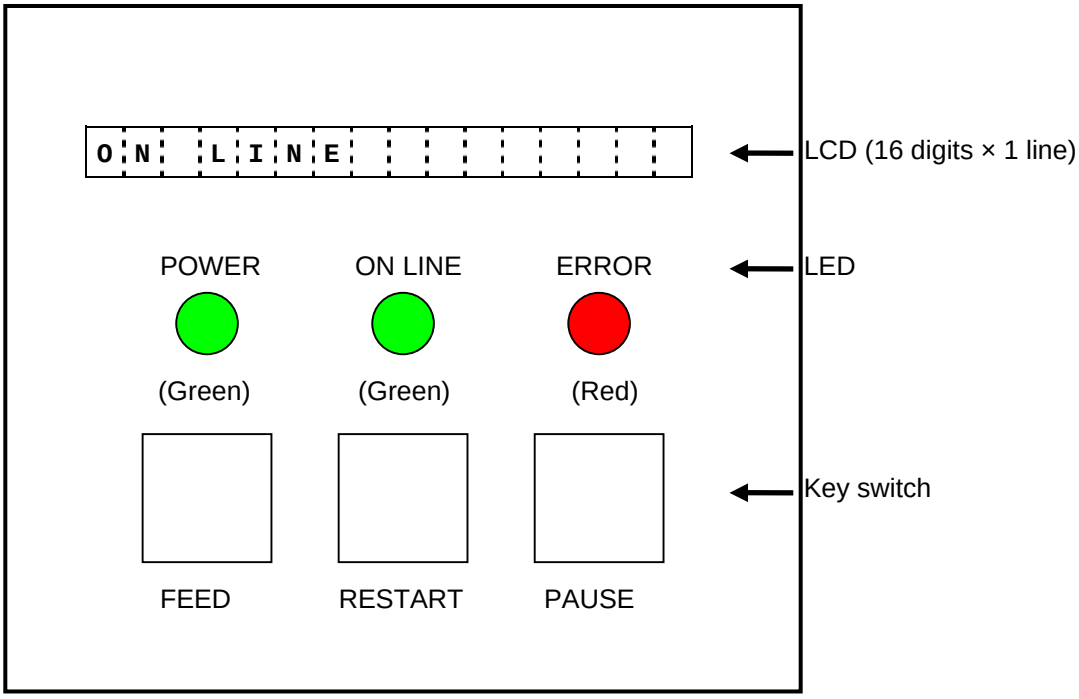
This specification describes key operations of the B-852-TS22-R (hereinafter referred to as “B-852”) series general-purpose bar code printers using their keys and the LCD display.

2. OUTLINE

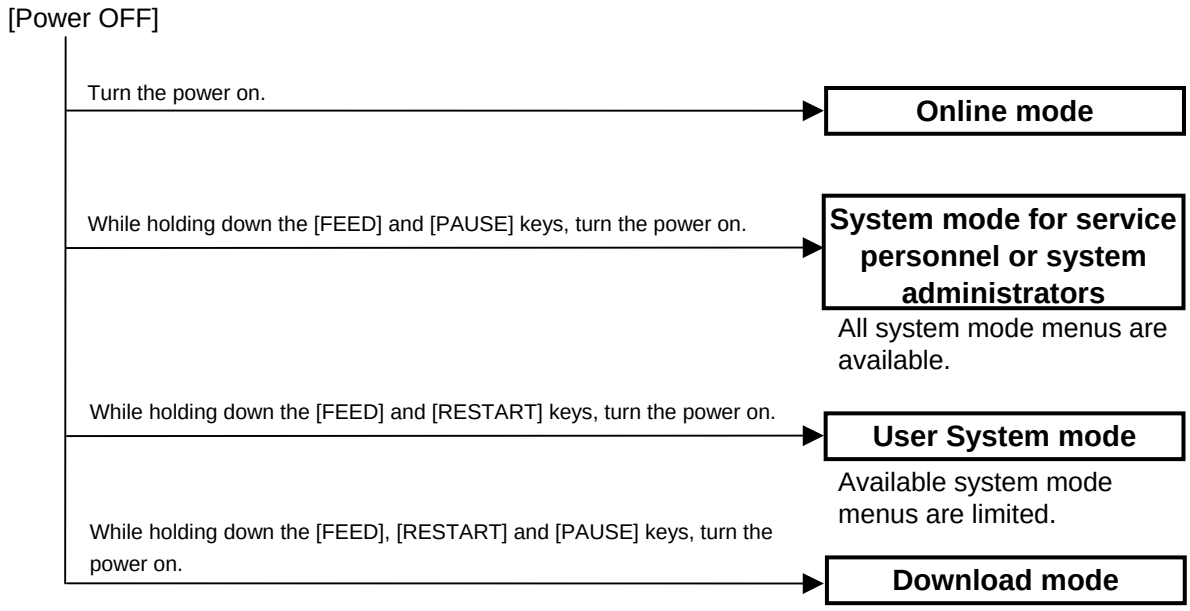
The key operations are performed roughly in two modes: online mode and system mode. In online mode, where the printer is connected to a host device such as a personal computer, the key operations are performed mainly to pause or restart the printer and to display printer status messages and error messages 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-852, although other languages are available for key names and LCD messages.

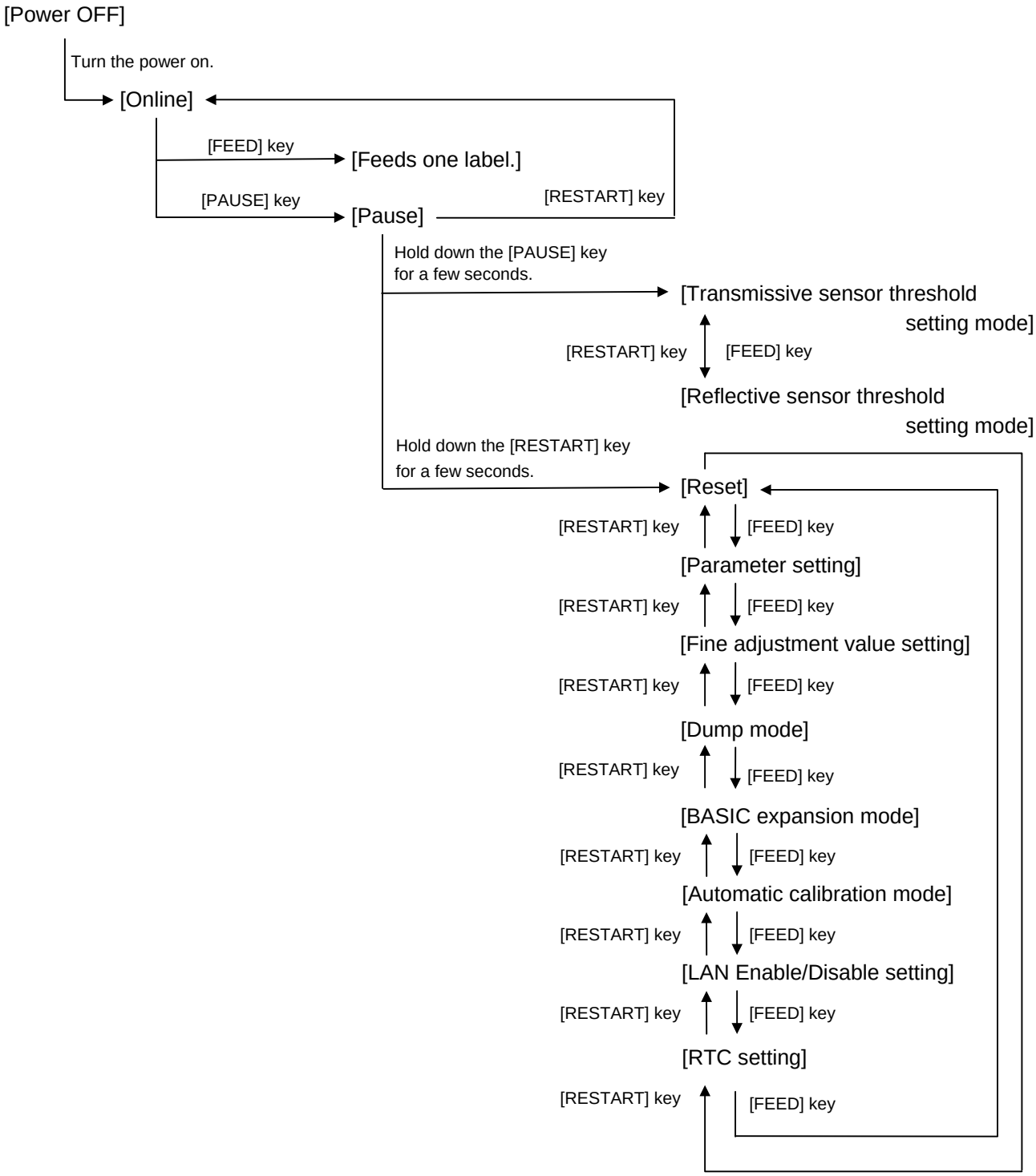
3. OPERATION PANEL



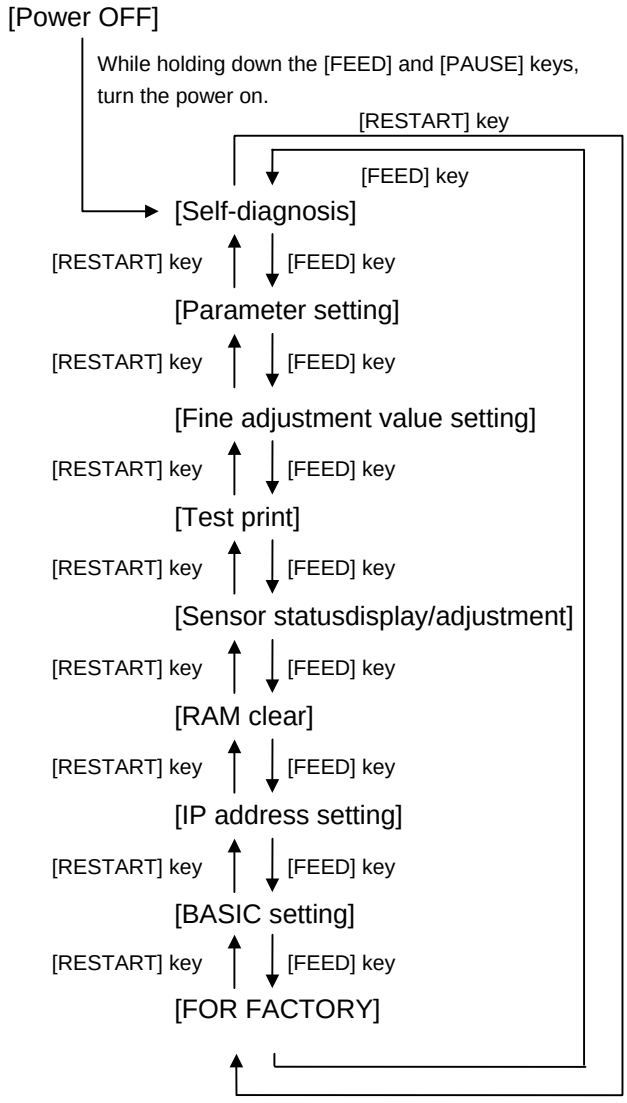
4. GENERAL VIEW OF KEY OPERATION



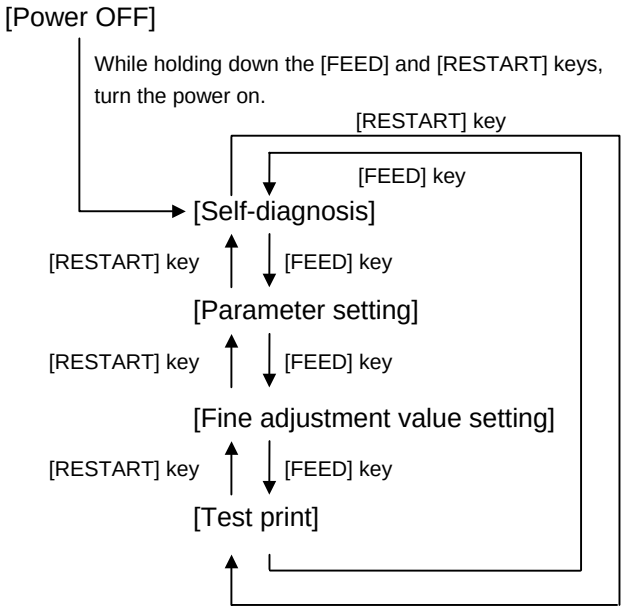
Online mode


[Power OFF]
Turn the power on.
[Online]
[FEED] key
[Feeds one label.]
[PAUSE] key
[Pause]
[RESTART] key
Hold down the [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]
[RESTART] key
[FEED] key
[Parameter setting]
[Fine adjustment value setting]
[Dump mode]
[BASIC expansion mode]
[Automatic calibration mode]
[LAN Enable/Disable setting]
[RTC setting]

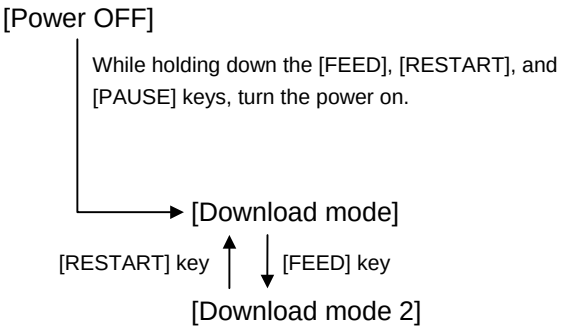
System mode for service personnel or system administrators



User System mode



Download 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.*

[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.

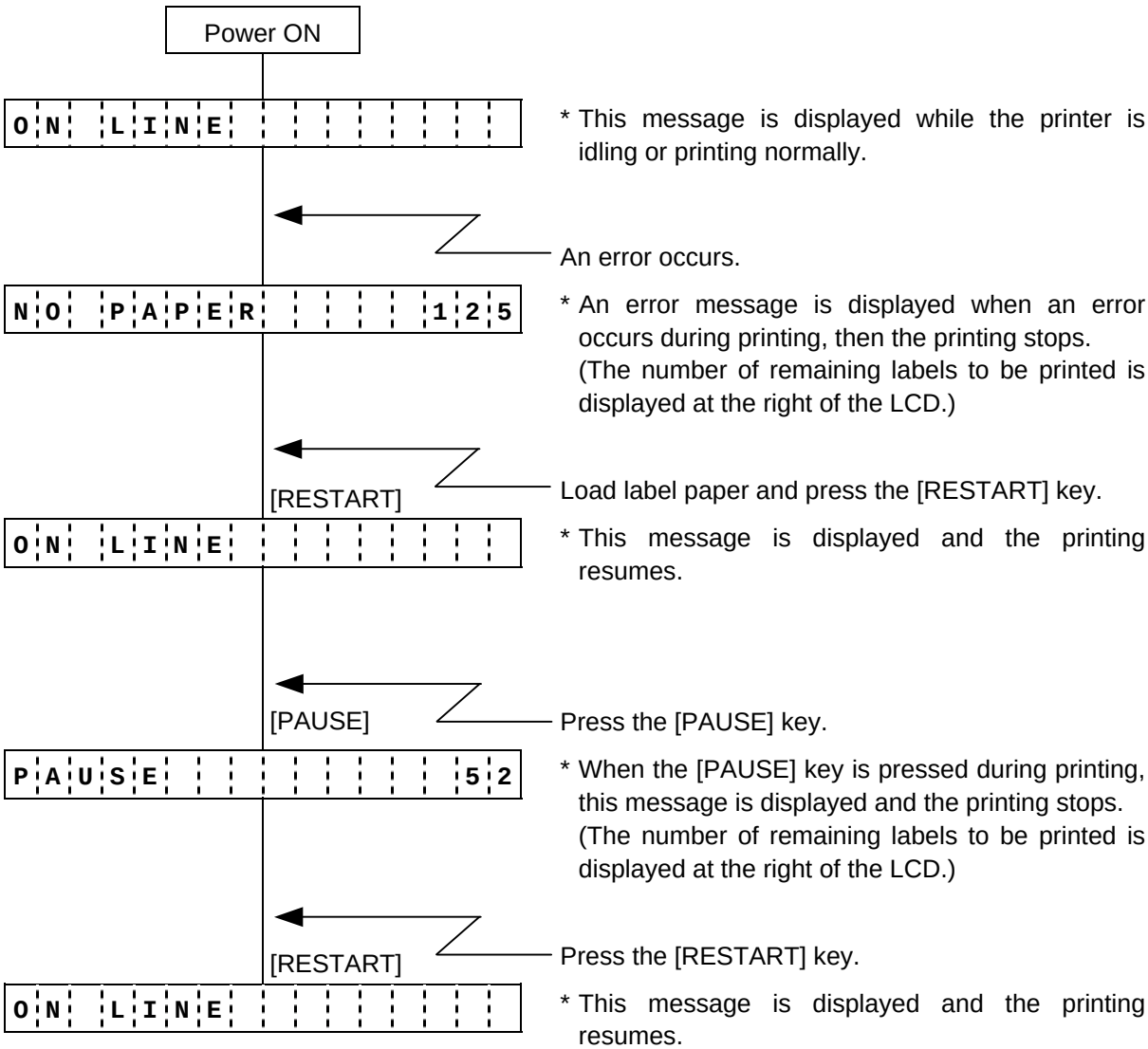
[ON LINE] LED: Indicates that the printer is ready for communication.

[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 × 1 line

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

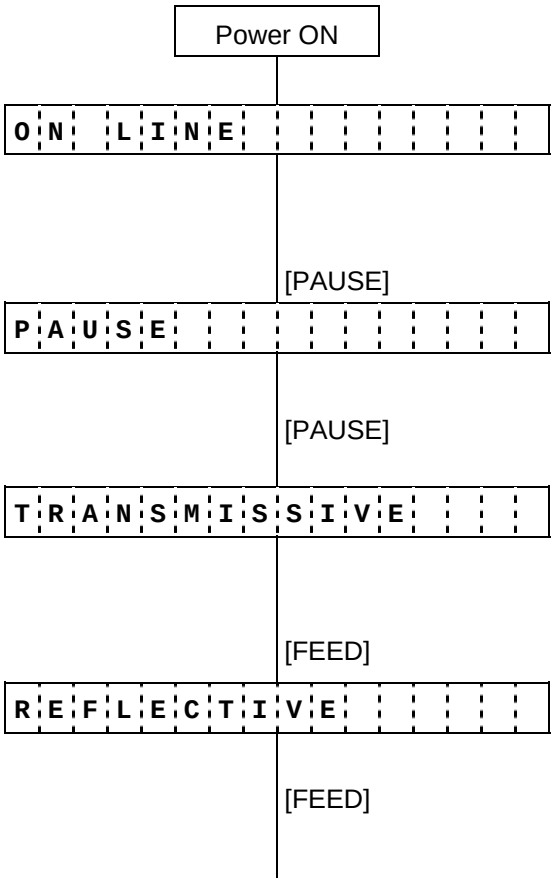
5.5.1 Outline of Threshold Setting

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 lower reflective sensor in 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/lower 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 preprinted label)” or “4: Lower 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.

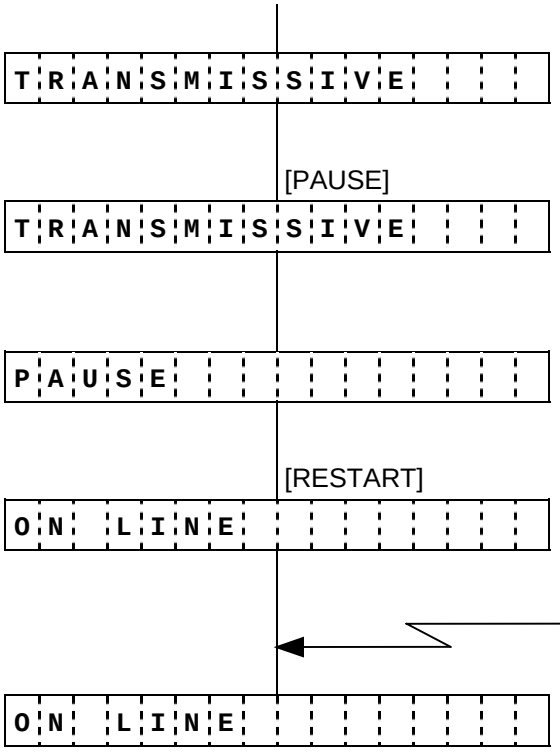
(5) Hold down the [PAUSE] key for 3 seconds or more while the printer is in a pause state.

(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 lower reflective sensor is displayed.

(9) Press the [FEED] key.



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

(11) Hold 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.

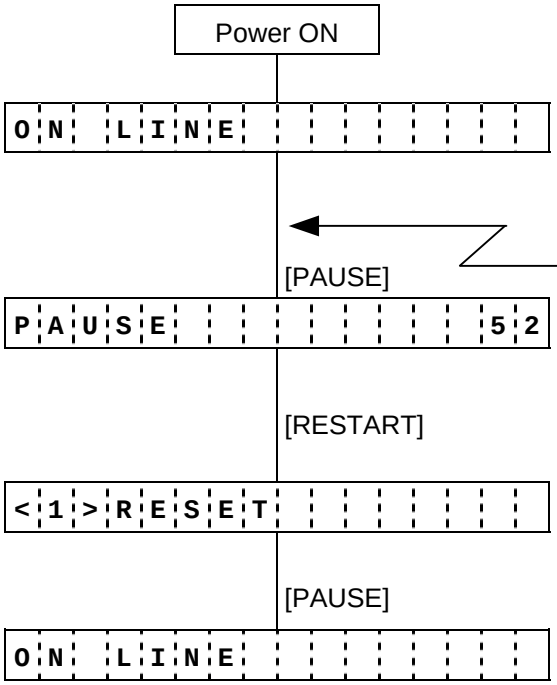
(2) To obtain an accurate threshold value, 1.5 or more labels should be fed. (If less than 1.5 labels are fed, the threshold value may not be accurate enough to start printing at a proper print start position. If the print start position is not correct, the threshold setting operation should be performed 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 the 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 preprinted label)” or “4: Lower Reflective sensor (when using a manual threshold value)”.

5.6 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.

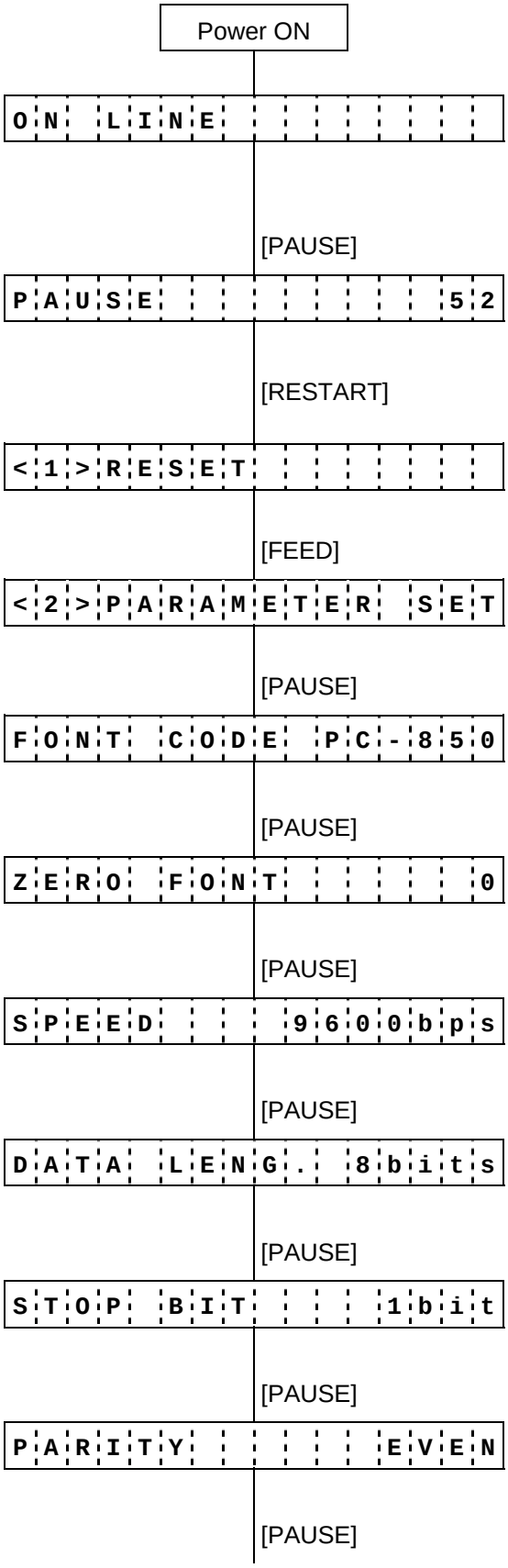
<Supplementary Explanations>

(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.

5.7 PARAMETER SETTING

5.7.1 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.

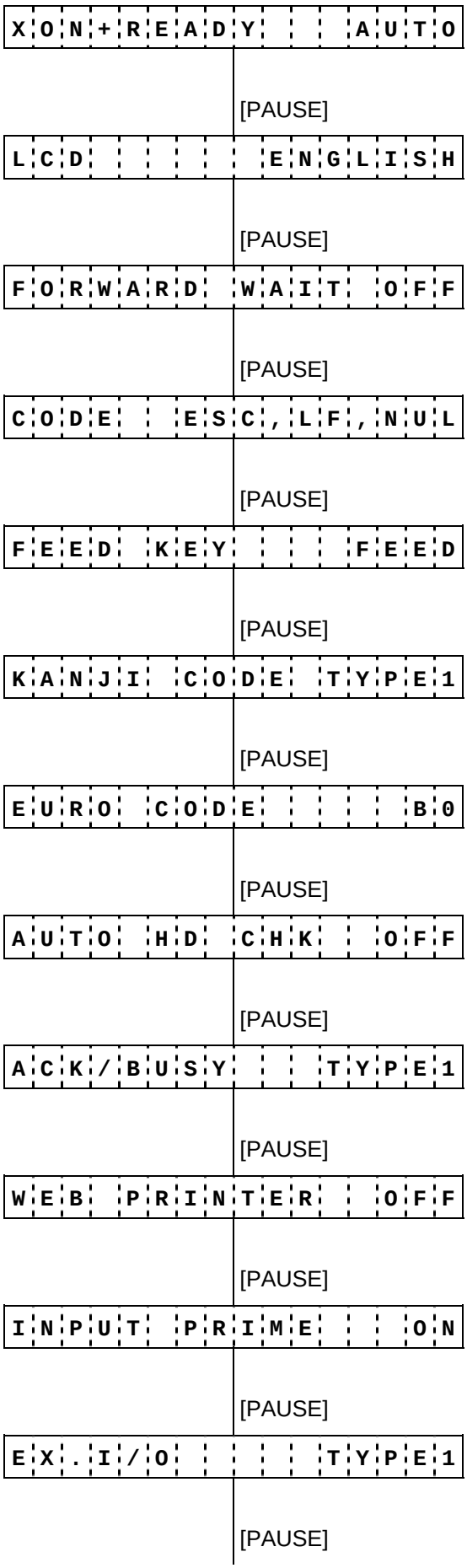
(16) Press the [PAUSE] key.

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

(18) Press the [PAUSE] key.

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

(20) Press the [PAUSE] key.



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

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

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

(27) Control code setting:
Select a control code using the [FEED] and [RESTART] keys.
(28) Press the [PAUSE] key.

(29) FEED key function setting:
Select a function of the FEED key using the [FEED] and [RESTART] keys.
(30) Press the [PAUSE] key.

(31) KANJI code setting:
Select a KANJI code using the [FEED] and [RESTART] keys.
(32) Press the [PAUSE] key.

(33) EURO code setting:
Select a EURO code using the [FEED] and [RESTART] keys.
(34) Press the [PAUSE] key.

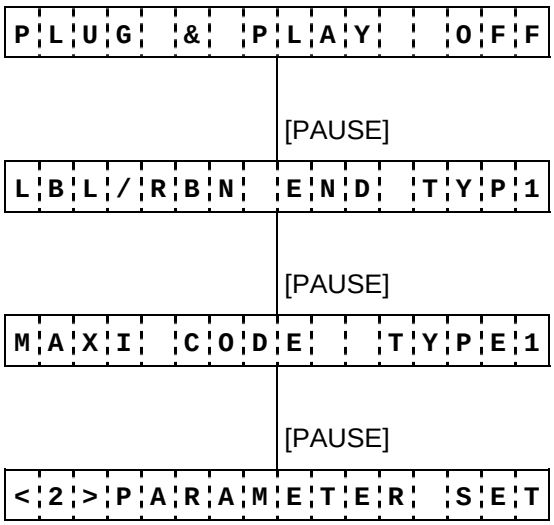
(35) Auto print head check setting:
Enable/disable the auto print head check using the [FEED] and [RESTART] keys.
(36) Press the [PAUSE] key.

(37) Centronics ACK/BUSY timing setting:
Select an ACK/BUSY timing using the [FEED] and [RESTART] keys.
(38) Press the [PAUSE] key.

(39) Web printer function setting:
Enable/disable the web printer function using the [FEED] and [RESTART] keys.
(40) Press the [PAUSE] key.

(41) Input prime setting:
Enable/disable the input prime function using the [FEED] and [RESTART] keys.
(42) Press the [PAUSE] key.

(43) Expansion I/O interface setting:
Select an expansion I/O interface using the [FEED] and [RESTART] keys.
(44) Press the [PAUSE] key.



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

(46) Press the [PAUSE] key.

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

(48) Press the [PAUSE] key.

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

(50) Press the [PAUSE] key.

(51) The parameter setting menu is displayed.

5.7.2 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-2318).*

(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 19 mm forward when a time of 1 second or more passes in the pause state, then stops.*

(The above is to prevent the curled paper from being caught by the cutter or the platen in cut issue mode, or to allow users to tear off labels manually in batch issue mode.)

(10) Control code (CODE)

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

(11) FEED key function (FEED KEY)

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

(12) KANJI code (KANJI CODE)

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

(13) EURO code (EURO CODE)

- 20H to FFH

(14) 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.

(15) 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.

(16) Web printer function (WEB PRINTER)

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

(17) Input prime (INPUT PRIME)

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

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

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

(19) Plug & Play (PLUG & PLAY)

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

(20) Label end/ribbon error (LBL/RBN END)

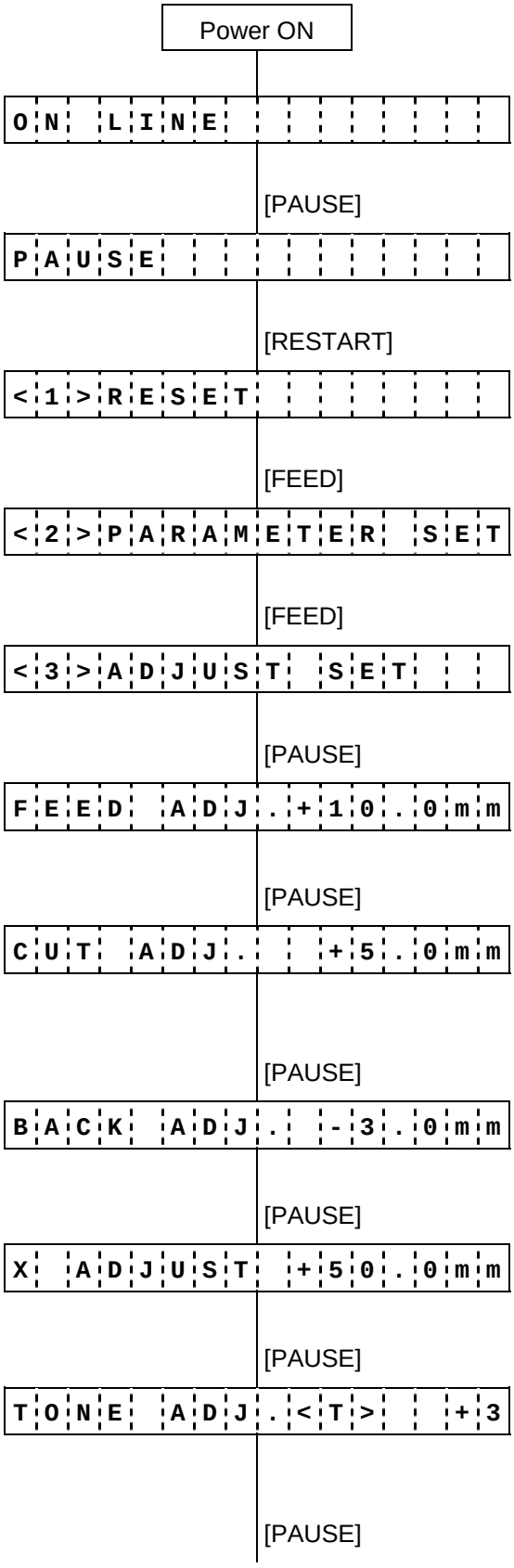
- TYPE1: When a label end or ribbon error is detected, the printer stops even if it is printing.
- TYPE2: When a label end or ribbon error is detected, the printer prints the current label as far as possible, then stops.

(21) MaxiCode specification (MAXI CODE)

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

5.8 FINE ADJUSTMENT VALUE SETTING

5.8.1 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 amount fine adjustment:
Set a fine adjustment value using the [FEED] and [RESTART] keys.

(12) Press the [PAUSE] key.

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

(14) Press the [PAUSE] key.

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

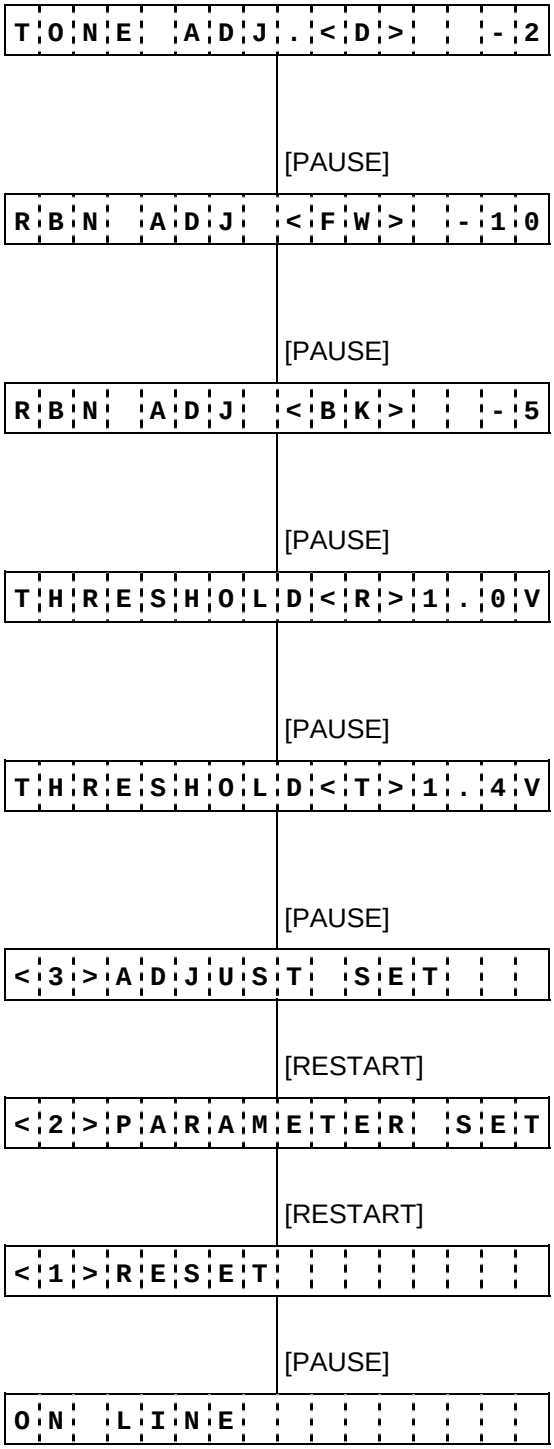
(16) Press the [PAUSE] key.

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

(18) Press the [PAUSE] key.

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

(20) Press the [PAUSE] key.



(21) Print tone 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) Lower 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.

5.8.2 Fine Adjustment Value Setting Items

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

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

(2) Cut position (stop position of the strip issue) 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 tone fine adjustment (Thermal transfer print mode) (TONE ADJ.<T>)
-10 step to +10 step (in units of 1 step)

(6) Print tone 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 +6 step (in units of 1 step)

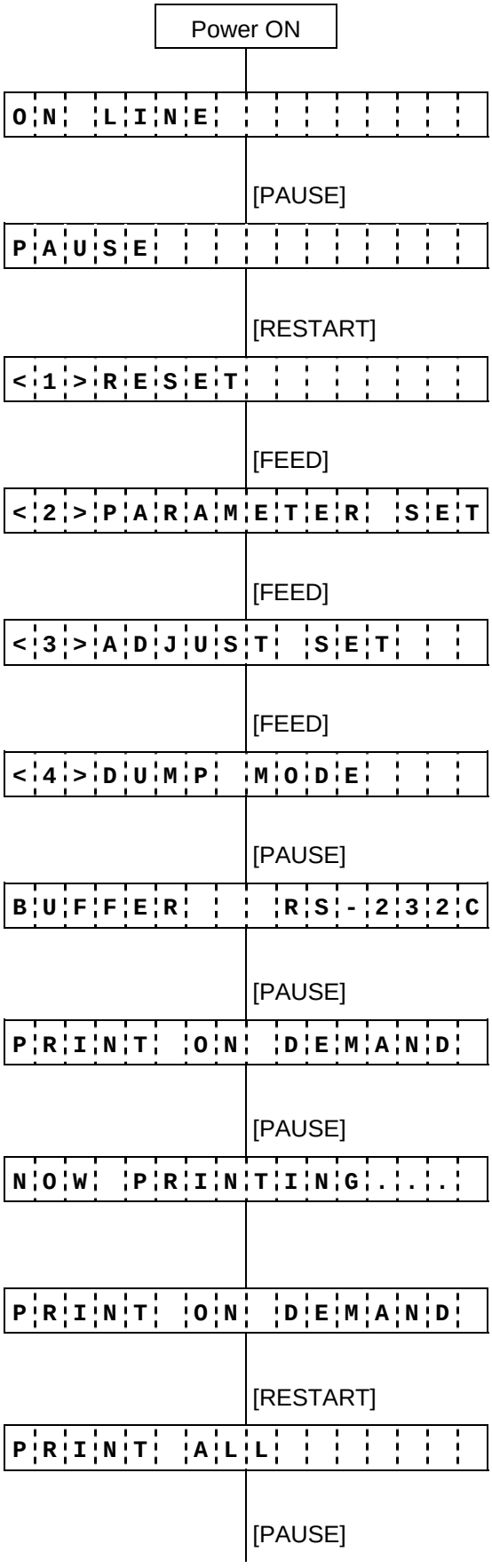
(8) Ribbon motor drive voltage fine adjustment (Feed) (RBN ADJ <BK>)
-15 step to +10 step (in units of 1 step)

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

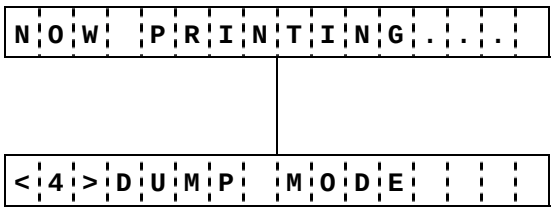
(10) Transmissive sensor manual threshold fine adjustment (THRESHOLD <T>)
0.0 V to 4.0 V (in 0.1 V units)

5.9 DUMPING OF RECEIVE BUFFER

5.9.1 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.

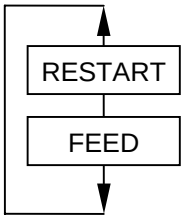


(23) Start of printing the remaining receive buffer data

(24) All of the remaining data is printed.

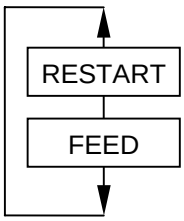
(25) After printing is completed, the display is returned to the receive buffer dumping menu.

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

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 method (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)

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

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.*

5.10 BASIC EXPANSION MODE

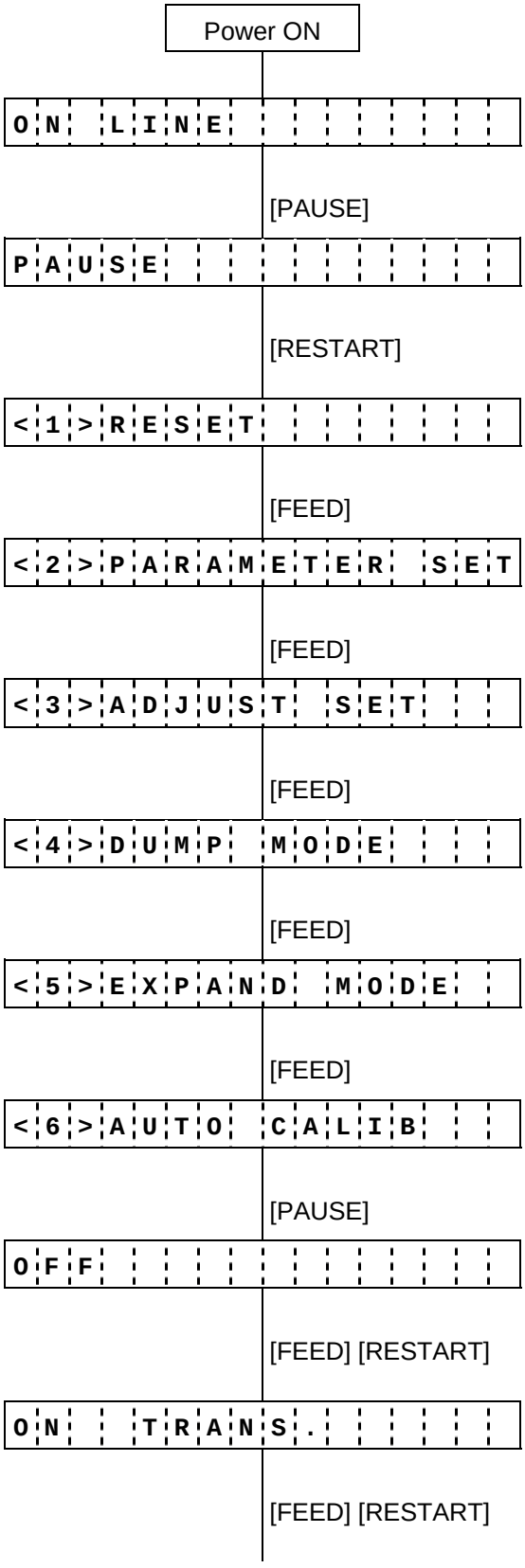
It is possible to execute the BASIC expansion mode program in BASIC expansion mode under the following conditions:

- 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.

5.11 AUTOMATIC CALIBRATION SETTING

5.11.1 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.

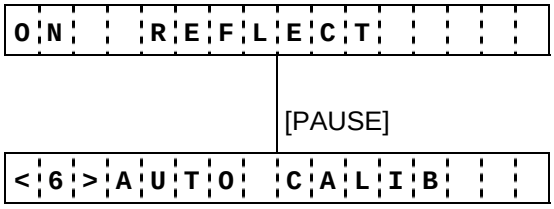
(16) Press the [PAUSE] key.

(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.

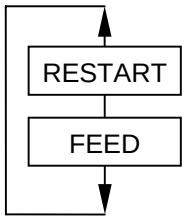


(21) The new setting is displayed

(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 print 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 lower 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 highest 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 stop position of the strip issue even in strip issue mode for auto labeler.

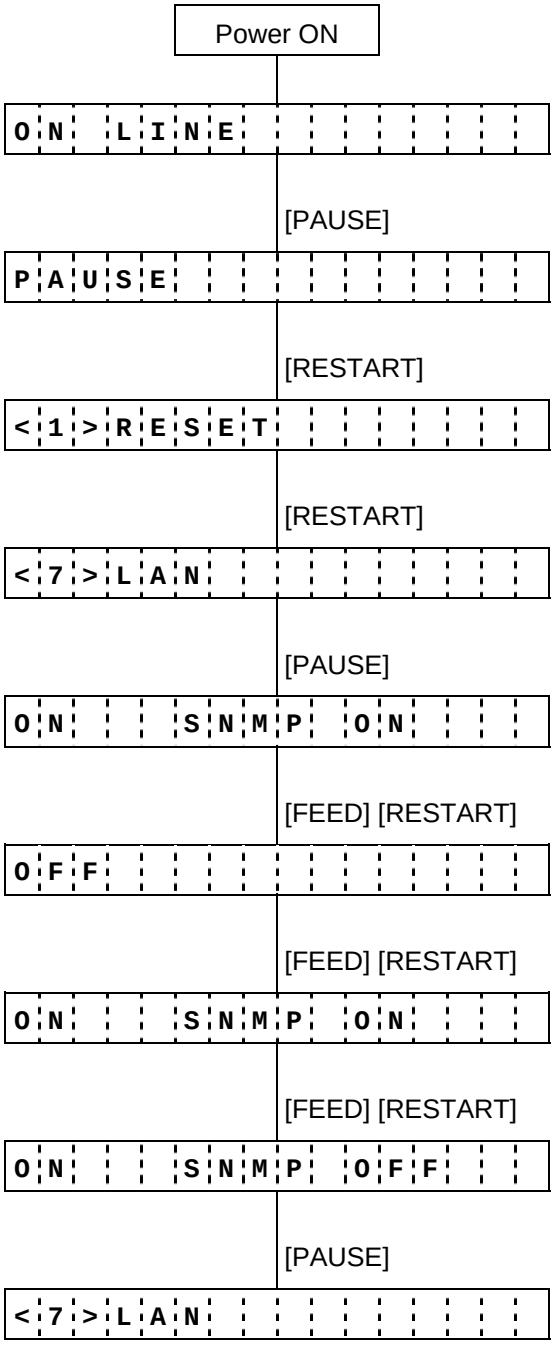
(10) When the automatic calibration is in operation, a label end error or head open error causes the printer to stop. Opening the head can clear the error and the automatic calibration resumes.

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

5.12 LAN ENABLE/DISABLE SETTING

5.12.1 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) LAN enable/disable setting menu display

(8) Press the [PAUSE] key.

(9) The current setting is displayed.

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

(11) The new setting is displayed.

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

(13) The new setting is displayed.

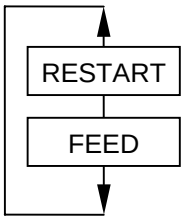
(14) Change the setting from SNMP ON to OFF using the [FEED] and [RESTART] keys.

(15) The new setting is displayed.

(16) Press the [PAUSE] key.

(17) LAN enable/disable setting menu display

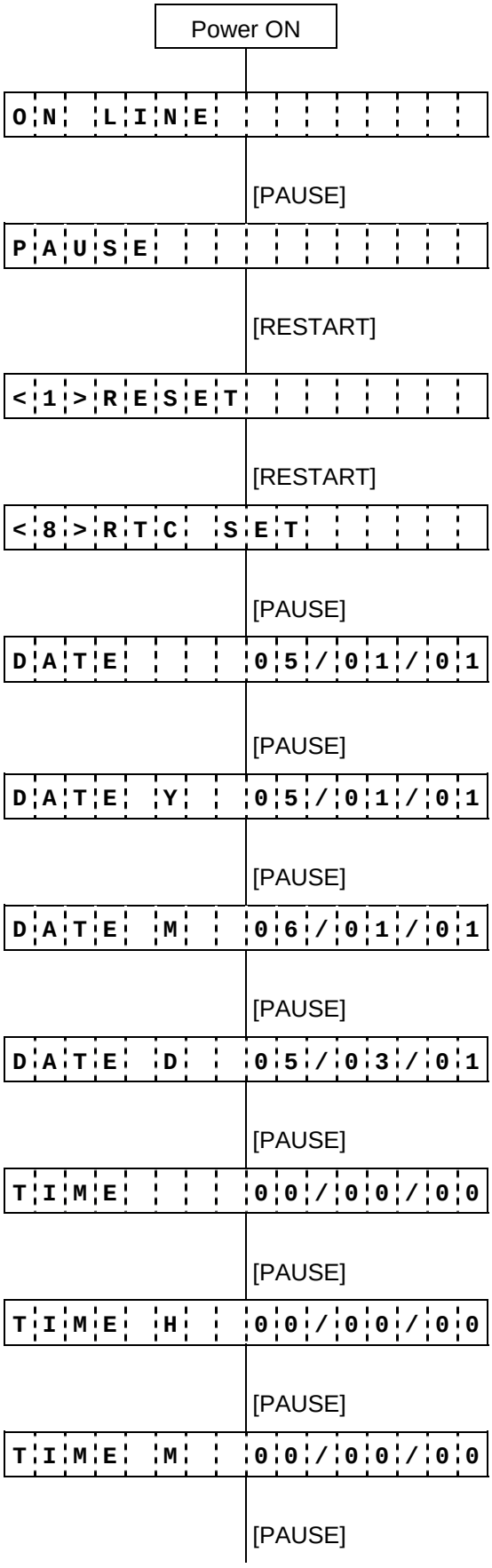
LAN enable/disable (LAN)



- OFF — Disabled
- ON SNMP ON — LAN is enabled, SNMP is enabled.
- ON SNMP OFF — LAN is enabled, SNMP is disabled.

5.13 REAL TIME CLOCK (RTC) SETTING

5.13.1 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.

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

(17) The current time is displayed.

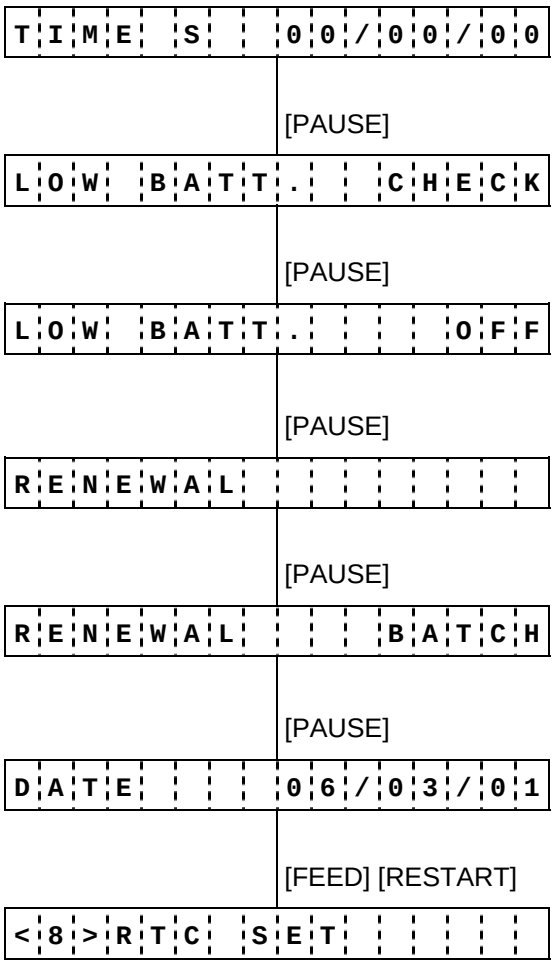
(18) Press the [PAUSE] key.

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

(20) Press the [PAUSE] key.

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

(22) Press the [PAUSE] key.



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

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

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

(26) Press the [PAUSE] key.

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

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

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

(30) Press the [PAUSE] key.

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

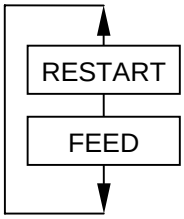
(32) Press the [PAUSE] key to save the setting.

(33) The current date is displayed.

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

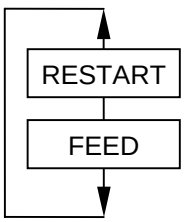
(35) The RTC setting menu is displayed.

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.

5.14 LCD MESSAGES AND LED INDICATIONS

No.	LCD Messages on (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	**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
9	**HEAD ERROR**	○	●	○	A broken dot error occurred in the thermal head.	Yes	Yes
10	**EXCESS HEAD TEMP**	○	●	○	The thermal head temperature is excessively high.	No	Yes
11	**RIBBON ERROR********	○	●	○	Ribbon has run out. An abnormal condition occurred in the sensor used for determining a torque for the ribbon motor.	Yes	Yes
12	**SAVING #### &&&&**	○	○	●	In writable character or PC command save mode	-	Yes
13	**FLASH WRITE ERR.**	○	●	○	An error occurred in writing data into memory for storage (flash ROM on the CPU board).	No	Yes
14	**FORMAT ERROR**	○	●	○	An error occurred in formatting memory for storage (flash ROM on the CPU board).	No	Yes
15	**FLASH CARD FULL**	○	●	○	Saving failed because of an insufficient capacity of memory for storage (flash ROM on the CPU board).	No	Yes

No.	LCD Messages on (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			
16	Display of error command *(See **NOTE 1**.)*	○	●	○	A command error occurred in analyzing a command.	Yes	Yes
17	**POWER FAILURE**	○	●	○	A momentary power interruption occurred.	No	No
18	**MEM. INITIAL…**	○	●	●	Memory for storage is being initialized. (Initialization is carried out for a maximum of approximately 15 seconds.)	–	–
19	**EEPROM ERROR**	○	●	○	Data cannot be read from/written to a backup EEPROM properly.	No	No
20	**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
21	**LAN INITIAL…**	○	●	●	The 100BASE LAN is being initialized.	–	–
22	**DHCP INITIAL…**	○	●	●	The DHCP client is being initialized. * When the DHCP function is enabled.	–	–
23	**LOW BATTERY**	○	●	○	The real time clock battery voltage is 1.9 V or less.		

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,

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

Command error

LCD display

T20G30

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

Command error

LCD display

XR;0200,0300,045

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)

5.15 LCD MESSAGES IN DIFFERENT LANGUAGES

No.	ENGLISH
1	ON LINE
2	HEAD OPEN
3	PAUSE ****
4	COMMS ERROR
5	PAPER JAM ****
6	CUTTER ERROR****
7	NO PAPER ****
8	HEAD OPEN ****
9	HEAD ERROR
10	EXCESS HEAD TEMP
11	RIBBON ERROR****
12	SAVING #### &&&&
13	FLASH WRITE ERR.
14	FORMAT ERROR
15	FLASH CARD FULL
16	MEM. INITIAL...
17	POWER FAILURE
18	EEPROM ERROR
19	SYSTEM ERROR
20	LAN INITIAL...
21	DHCP INITIAL...
22	LOW BATTERY

No.	GERMAN
1	ON LINE
2	KOPF OFFEN
3	PAUSE ****
4	UEBERTR.-FEHLER
5	PAPIERSTAU ****
6	MESSERFEHL. ****
7	PAPIERENDE ****
8	KOPF OFFEN ****
9	KOPF DEFEKT
10	KOPF UEBERHITZT
11	FB-FEHLER ****
12	SP.-MOD #### &&&&
13	FLASH FEHLER
14	FORMATFEHLER
15	FLASH ZU KLEIN
16	MEM. INITIAL...
17	POWER FAILURE
18	EEPROM ERROR
19	SYSTEM ERROR
20	LAN INITIAL...
21	DHCP INITIAL...
22	LOW BATTERY

No.	FRENCH
1	PRETE
2	TETE OUVERTE
3	PAUSE ****
4	ERR. COMMUNICAT.
5	PB. PAPIER ****
6	PB. CUTTER ****
7	FIN PAPIER ****
8	TETE OUVERTE****
9	ERREUR TETE
10	TETE TROP CHAUDE
11	ERREUR RUBAN****
12	MEM LIB #### &&&&
13	ERREUR MEM FLASH
14	ERREUR DE FORMAT
15	MEM INSUFFISANTE
16	MEM. INITIAL...
17	POWER FAILURE
18	EEPROM ERROR
19	SYSTEM ERROR
20	LAN INITIAL...
21	DHCP INITIAL...
22	LOW BATTERY

No.	DUTCH
1	IN LIJN
2	KOP OPEN
3	PAUZE ****
4	COMM. FOUT
5	PAPIER VAST ****
6	SNIJMES FOUT****
7	PAPIER OP ****
8	KOP OPEN ****
9	PRINTKOP DEFECT
10	TEMP. FOUT
11	LINT FOUT ****
12	MEM #### &&&&
13	FLASH MEM FOUT
14	FORMAAT FOUT
15	GEHEUGEN VOL
16	MEM. INITIAL...
17	POWER FAILURE
18	EEPROM ERROR
19	SYSTEM ERROR
20	LAN INITIAL...
21	DHCP INITIAL...
22	LOW BATTERY

No.	SPANISH
1	ON LINE
2	CABEZAL ABIERTO
3	PAUSA ****
4	ERROR COMUNICACI
5	ATASCO PAPEL****
6	ERROR CORTAD****
7	SIN PAPEL ****
8	CABEZA ABIER****
9	ERROR DE CABEZAL
10	TEMP.CABEZA ALTA
11	ERROR CINTA ****
12	SALVAR #### &&&&
13	ERROR ESCRITURA
14	ERROR DE FORMATO
15	MEMORIA INSUFICI
16	MEM. INITIAL...
17	POWER FAILURE
18	EEPROM ERROR
19	SYSTEM ERROR
20	LAN INITIAL...
21	DHCP INITIAL...
22	LOW BATTERY

No.	JAPANESE
1	
2	
3	
4	
5	
6	
7	
8	
9	
10	
11	
12	
13	
14	
15	
16	
17	
18	
19	
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21	
22	

* Japanese messages are omitted here.

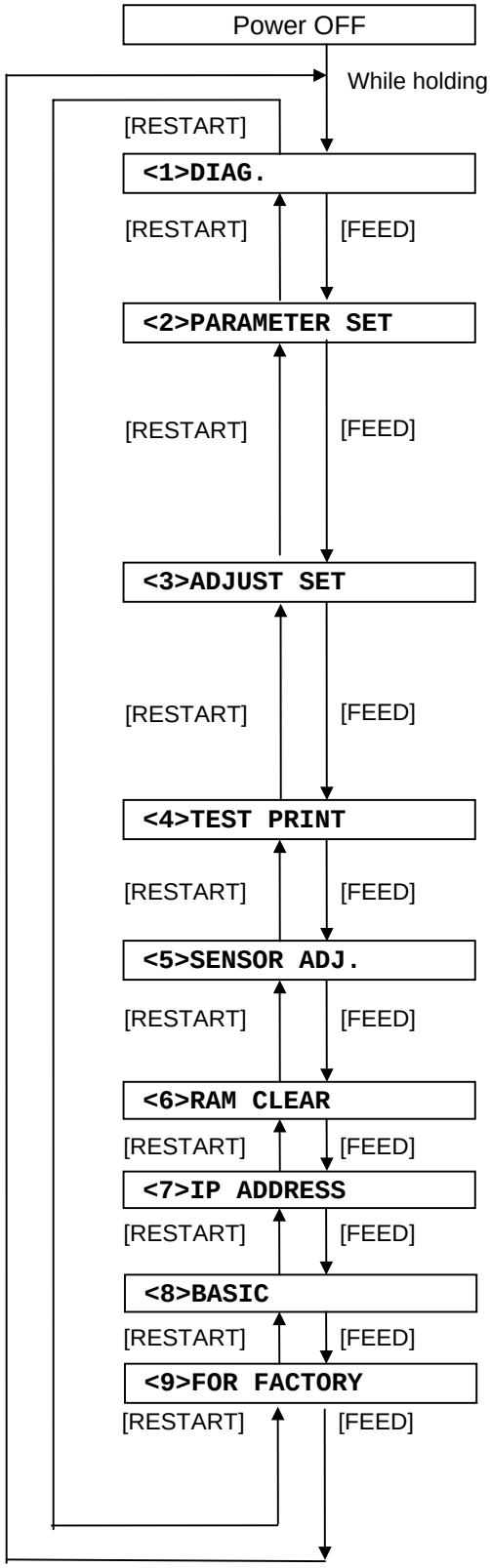
No.	Italian
1	PRONTA
2	TESTA APERTA
3	PAUSA ****
4	ERR. COMUNICAZ.
5	CARTA INCEP.****
6	ERR. TAGL. ****
7	NO CARTA ****
8	TESTA APERTA****
9	ERROR TESTA
10	TEMP. TESTA ALTA
11	ERR. NASTRO ****
12	SALVA #### &&&&
13	ERR.SCRITT.CARD
14	ERR. FORMATTAZ.
15	MEM. CARD PIENA
16	MEM. INITIAL...
17	POWER FAILURE
18	EEPROM ERROR
19	SYSTEM ERROR
20	LAN INITIAL...
21	DHCP INITIAL...
22	LOW BATTERY

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 personnel 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 broken dots 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, Control code, KANJI code, FEED key function, Auto print head check, EURO code, Web printer function, Centronics ACK/BUSY timing, Input prime, Label end/ribbon error, Expansion I/O interface, Plug & Play, MaxiCode specification

Feed amount fine adjustment, Cut position (stop position of the strip issue) fine adjustment, Reverse feed amount fine adjustment, X-coordinate fine adjustment, Print tone fine adjustment (Thermal transfer/Direct thermal print mode), Ribbon motor drive voltage fine adjustment, Transmissive sensor manual threshold fine adjustment, Lower 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/Lower reflective sensor), Line print for assembly process

Thermal head thermistor display, Ambient temperature thermistor display, Upper reflective sensor display/adjustment, Lower reflective sensor display/adjustment, Transmissive sensor display/adjustments, No paper status sensor adjustment

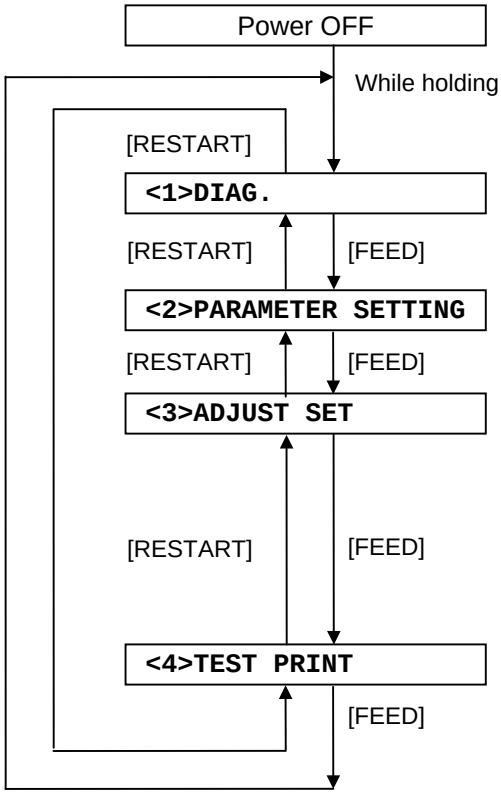
Maintenance counter clear, Various parameter clear

Printer IP address setting, Gateway IP address setting, Submask 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

●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

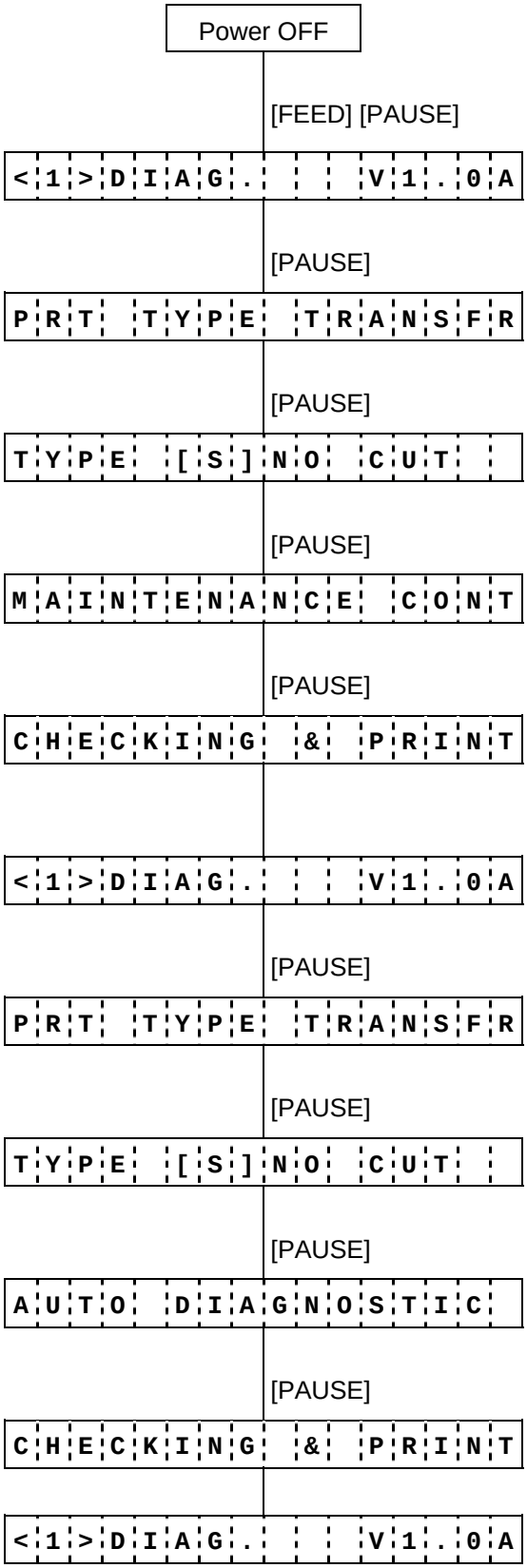
Feed amount fine adjustment, Cut position (stop position of the strip issue) fine adjustment, Reverse feed amount fine adjustment, X-coordinate fine adjustment, Print density fine adjustment (Thermal transfer/Direct thermal print mode), Ribbon motor drive voltage fine adjustment, Transmissive sensor manual threshold fine adjustment, Lower 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/Lower reflective sensor), Line print for assembly process

6.2 SELF-TEST

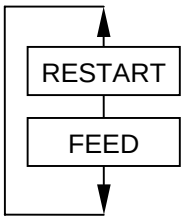
6.2.1 Self-test Operation Example

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



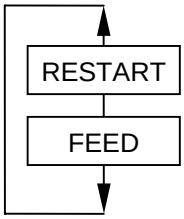
(1) Power off state
(2) While holding the [FEED] and [PAUSE] keys down, turn the power on.
(3) The self-test menu is displayed.
(4) Press the [PAUSE] key.
(5) Print type setting mode
(6) Press the [PAUSE] key.
(7) Issue type setting mode
(8) Press the [PAUSE] key.
(9) Print mode for maintenance counter 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)

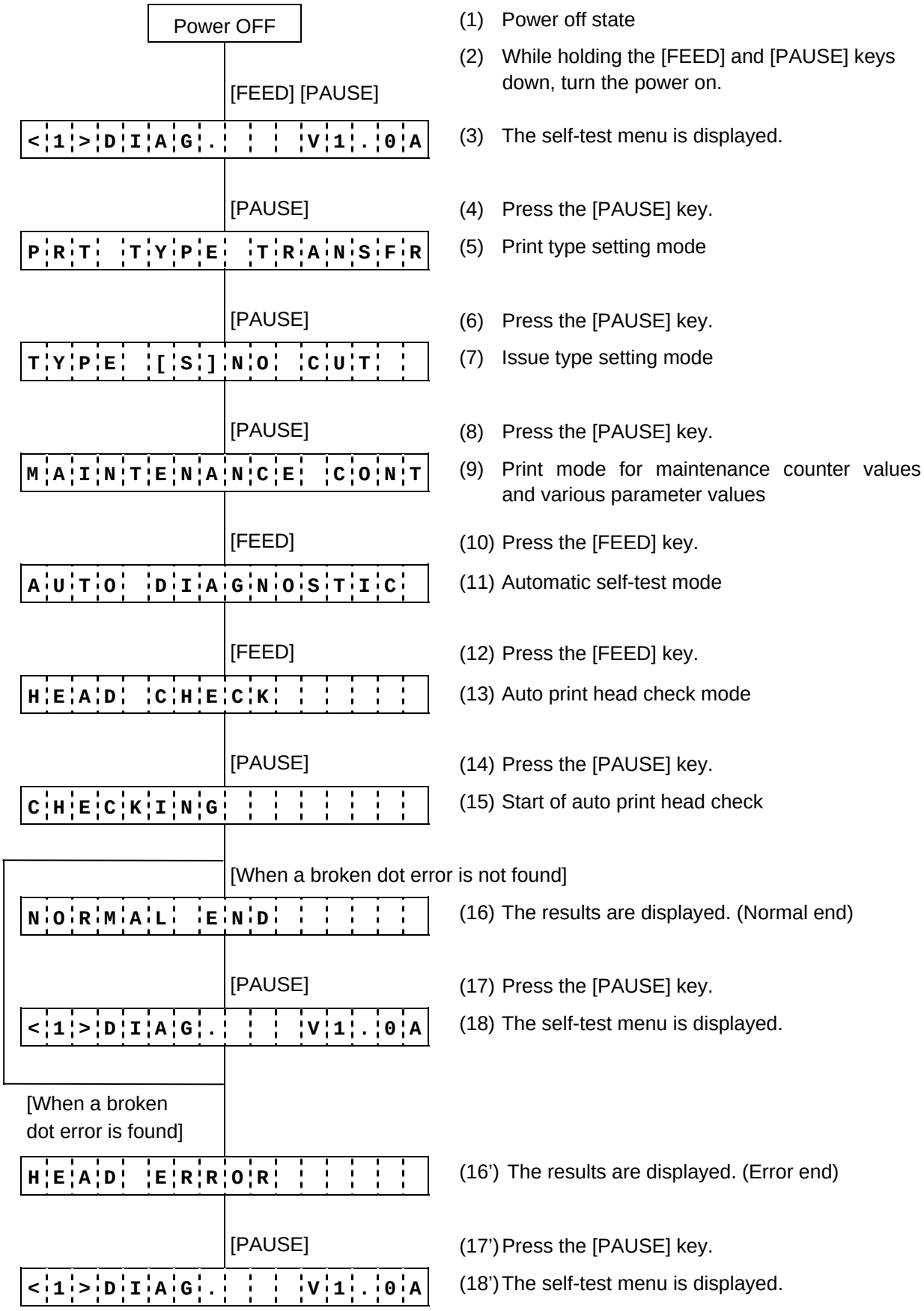
Issue type (TYPE)



- [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.

(15) Start of auto print head check

(16) The results are displayed. (Normal end)

(17) Press the [PAUSE] key.

(18) The self-test menu is displayed.

(16') The results are displayed. (Error end)

(17') Press the [PAUSE] key.

(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
- Ribbon motor drive time
- RS-232C hardware error count
- System error count
- Momentary power interruption count

② Various parameter values

[Value programmed on the PC]

- Feed amount fine adjustment value
- Cut position (stop position of the strip issue) fine adjustment value
- Reverse feed amount fine adjustment value
- Print tone fine adjustment value (Thermal transfer print mode)
- Print tone 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 amount fine adjustment value
- Cut position (stop position of the strip issue) fine adjustment value
- Reverse feed amount fine adjustment value
- Print tone fine adjustment value (Thermal transfer print mode)
- Print tone 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
- Lower 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 feed standby (ON: A dimensional fine adjustment is available.)
- Control code
- FEED key function
- KANJI code
- EURO code
- Auto print head check
- Centronics ACK/BUSY timing
- Web printer function
- Input prime
- Expansion I/O interface
- Plug & Play
- Label end/ribbon error
- MaxiCode specification
- Automatic calibration

- LAN enable/disable
- IP address
- MAC address
- BASIC
- Socket communication port number
- BASIC interpreter
- DHCP
- RTC low battery check
- RTC data renewal timing

(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

- Thermal head open sensor
- Cutter home position sensor
- Ribbon take-up motor sensor
- Ribbon feed motor sensor
- Thermal head thermistor
- Ambient temperature sensor
- Upper reflective sensor
- Lower reflective sensor
- Transmissive sensor
- No paper level
- Manual threshold level

③ Expansion I/O loop back check

④ Internal serial I/F loop back check

⑤ SIO loop back check

Print Samples of Self-test Result

(1) Maintenance counter values and various parameter values

```
TOTAL FEED      1.1km                   [QP]
FEED            1.1km
PRINT           0.5km
CUT             96
RIBBON          3h
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
CODE                [AUTO]
FEED KEY            [FEED]
KANJI               [TYPE1]
EURO CODE           [B0]
AUTO HD CHK         [OFF]
ACK/BUSY            [TYPE1]
WEB PRINTER         [OFF]
INPUT PRIME         [ON]
EX.I/O MODE         [TYPE1]
PLUG & PLAY         [OFF]
LBL/RBN END         [TYPE1]
MAXI CODE SPEC.     [TYPE1]
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      [ABCDEFGHIJKLMNOP]
RTC BATT. CHK       [ON]
RTC RENEWAL         [BATCH]
```

NOTE: *Print conditions: Label length of 220 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

PROGRAM	B-850-R
MAIN	15MAR2006 V1.0A:1A00
BOOT	20MAR2006 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(U)]4.2V [R(L)]4.0V
	[T]2.5V
PE LV.	[R(U)]1.2V [R(L)]1.3V
	[T]4.3V
M THRE.	[R]5.0V [T]5.0V
EXP.I/O	NG
EX.232C	NG
SIO	NG NG

NOTES: *1. Print conditions: Label length of 92 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
RIBBON	Ribbon motor drive time	0 to 2000 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

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.
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.
Momentary power interruption count	Counts when a momentary power interruption occurs.

(2) Various parameters values

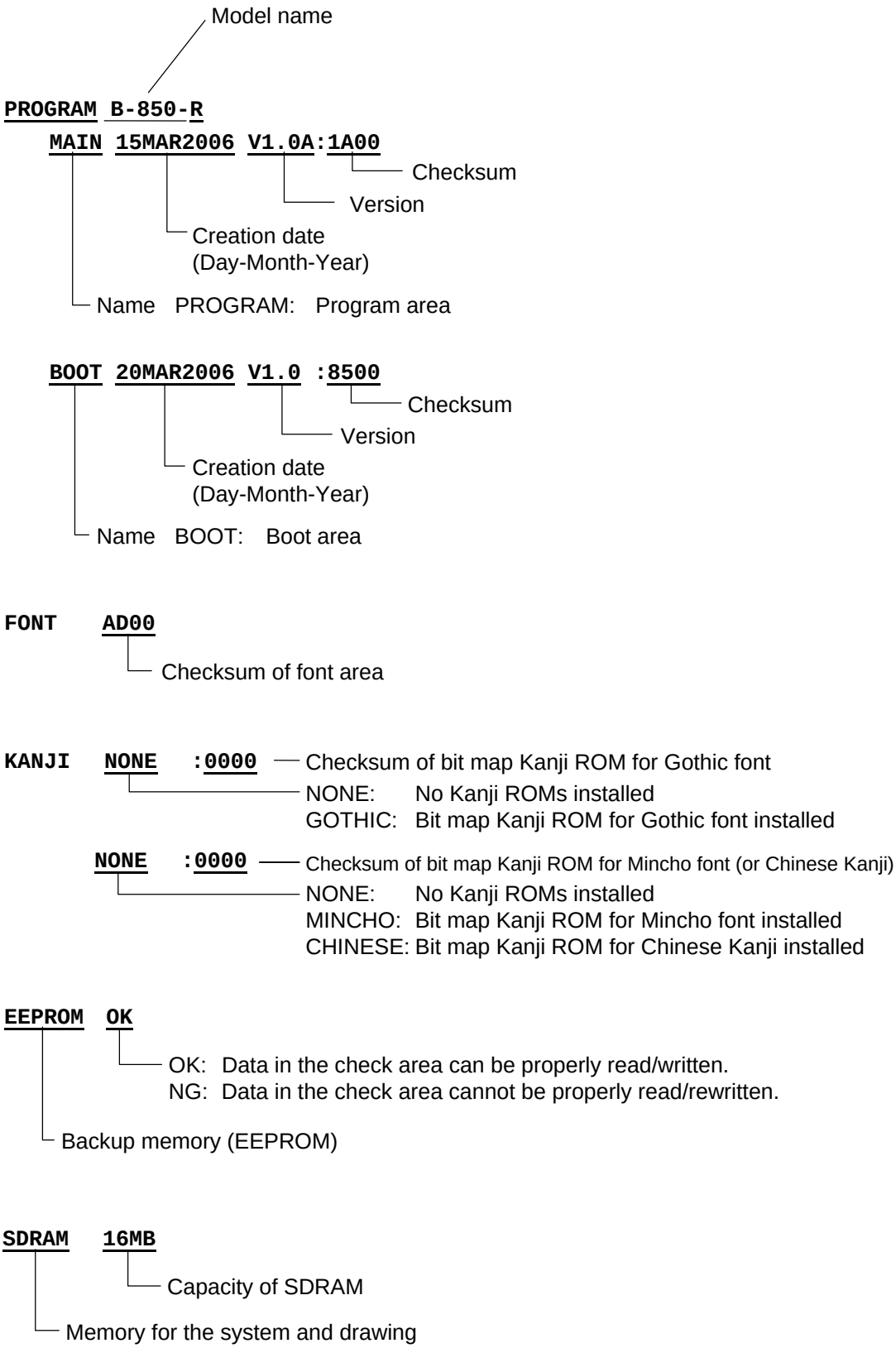
Item		Description	Specification
[PC]	**FEED**	Feed amount fine adjustment	-50.0 mm to +50.0 mm
	CUT	Cut position (stop position of the strip issue) fine adjustment	-50.0 mm to +50.0 mm
	BACK	Reverse feed amount fine adjustment	-9.9 mm to +9.9 mm
	TONE(T)	Print tone fine adjustment (Thermal transfer print mode)	-10 to +10 step
	TONE(D)	Print tone fine adjustment (Direct thermal print mode)	-10 to +10 step
	RBN(FW)	Ribbon motor drive voltage fine adjustment (Take-up)	-15 to +6 step
	RBN(BK)	Ribbon motor drive voltage fine adjustment (Feed)	-15 to +10 step
[KEY]	**FEED**	Feed amount fine adjustment	-50.0 mm to +50.0 mm
	CUT	Cut position (stop position of the strip issue) fine adjustment	-50.0 mm to +50.0 mm
	BACK	Reverse feed amount fine adjustment	-9.9 mm to +9.9 mm
	TONE(T)	Print tone fine adjustment (Thermal transfer print mode)	-10 to +10 step
	TONE(D)	Print tone fine adjustment (Direct thermal print mode)	-10 to +10 step
	RBN(FW)	Ribbon motor drive voltage fine adjustment (Take-up)	-15 to +6 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>		Lower 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
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

Item	Description	Specification
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: None ODD: ODD parity EVEN: EVEN parity
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 feed standby	ON: Enabled (A fine adjustment value for the stop position is also printed.) OFF: Disabled

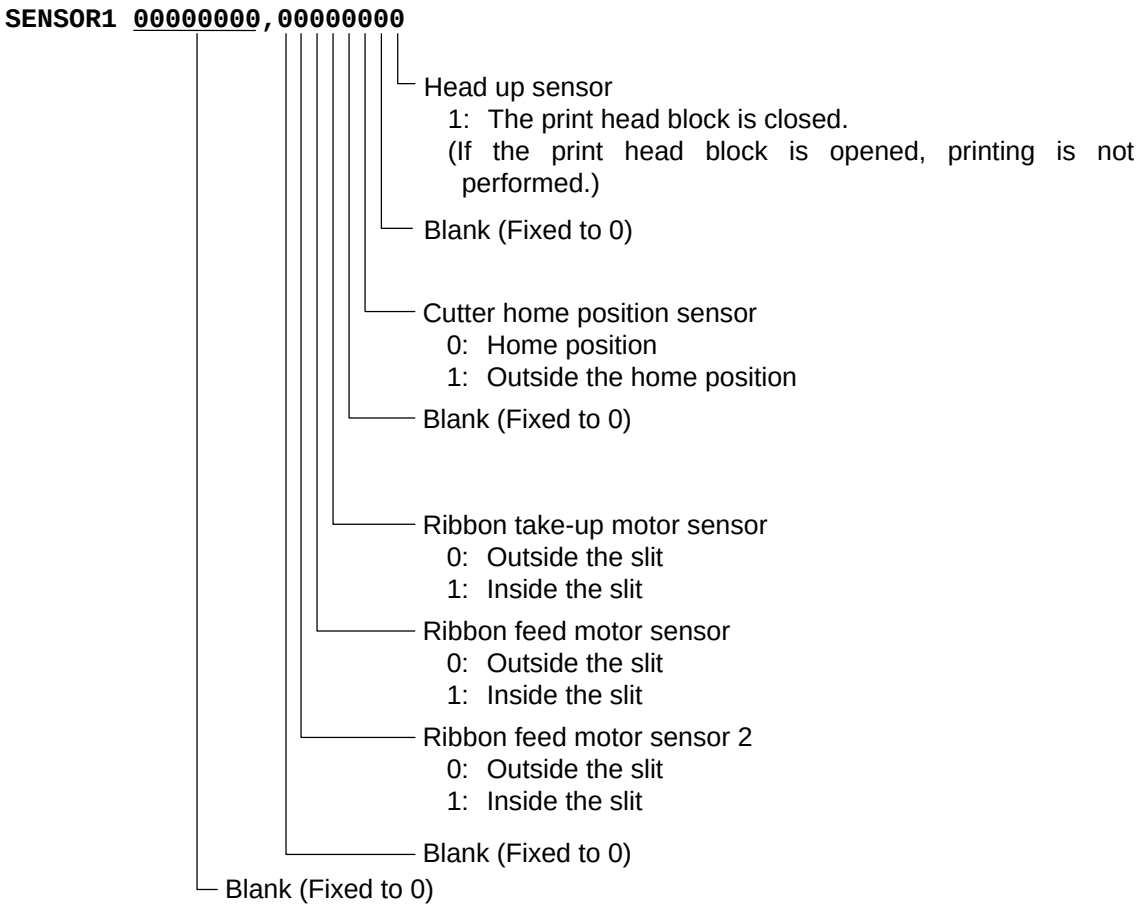
Item	Description	Specification
CODE	Control code	AUTO: Automatic selection ESC LF NUL: ESC LF NUL method { | }: { | } method ××○○△△ Any code set (Described in hex. code)
FEED KEY	FEED key function	FEED: Feeds one label. PRINT: Prints data in the image buffer on one label.
KANJI	KANJI code	TYPE1: For Windows codes TYPE2: For original codes
EURO CODE	EURO code	Any code
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 error	TYP1: When a label end or ribbon error is detected, the printer stops even if it is printing. TYP2: When a label end or ribbon error is detected, the printer prints the current label as far as possible, then stops.
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 lower reflective sensor
LAN	LAN enable/disable	ON SNMP ON: LAN enabled, SNMP enabled ON SNMP 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
RTC BATT.CHK	RTC low battery check	ON: Enabled OFF: Disabled
RTC RENEWAL	RTC data renewal timing	BATCH: Per batch PAGE: Per page

(3) Memory check



(4) Sensor check



SENSOR2 [H]20°C [A]22°C

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

[R(U)]4.2V [R(L)]2.5V

- [R(L)]2.5V: Lower reflective sensor status (0.0 to 5.0 V)
- [R(U)]4.2V: Upper reflective sensor status (0.0 to 5.0 V)

[T]2.5V

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

PE LV. [R(U)]1.2V [R(L)]1.3V

- [R(L)]1.3V: Lower reflective sensor for no paper level (0.0 to 5.0 V)
- [R(U)]1.2V: Upper reflective sensor for no paper level (0.0 to 5.0 V)

[T]4.3V

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

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: Lower reflective sensor manual threshold level (0.0 to 5.0 V)

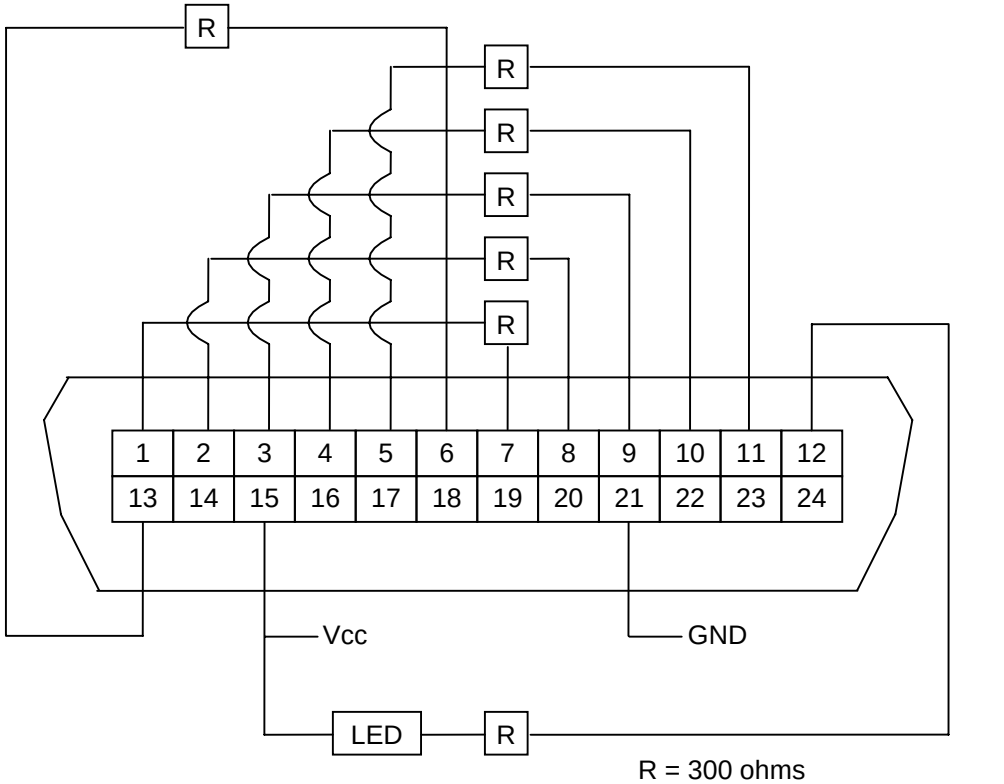
(5) Expansion I/O check

EXP.I/O 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

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

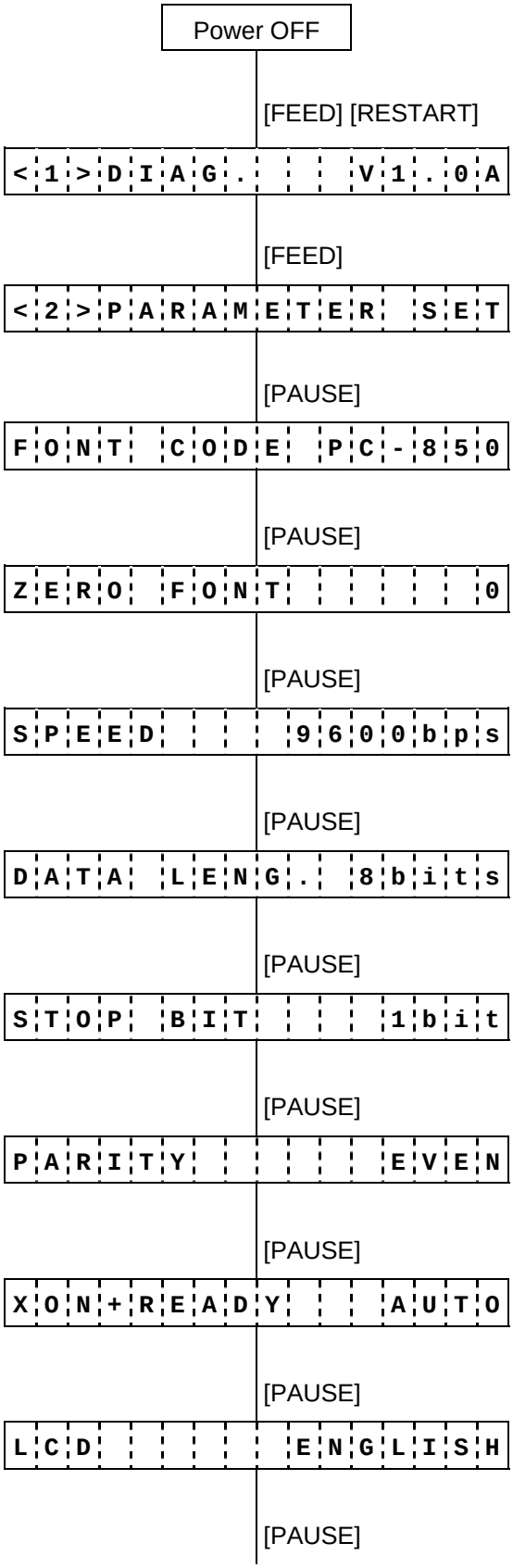
DIN OK: Normal data
NG: Abnormal data, or the loop-back jig is not connected.

DSUB OK: Normal data
NG: Abnormal data, or the loop-back jig is not connected.

SIO I/F

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) Character code setting:
Select a character 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.

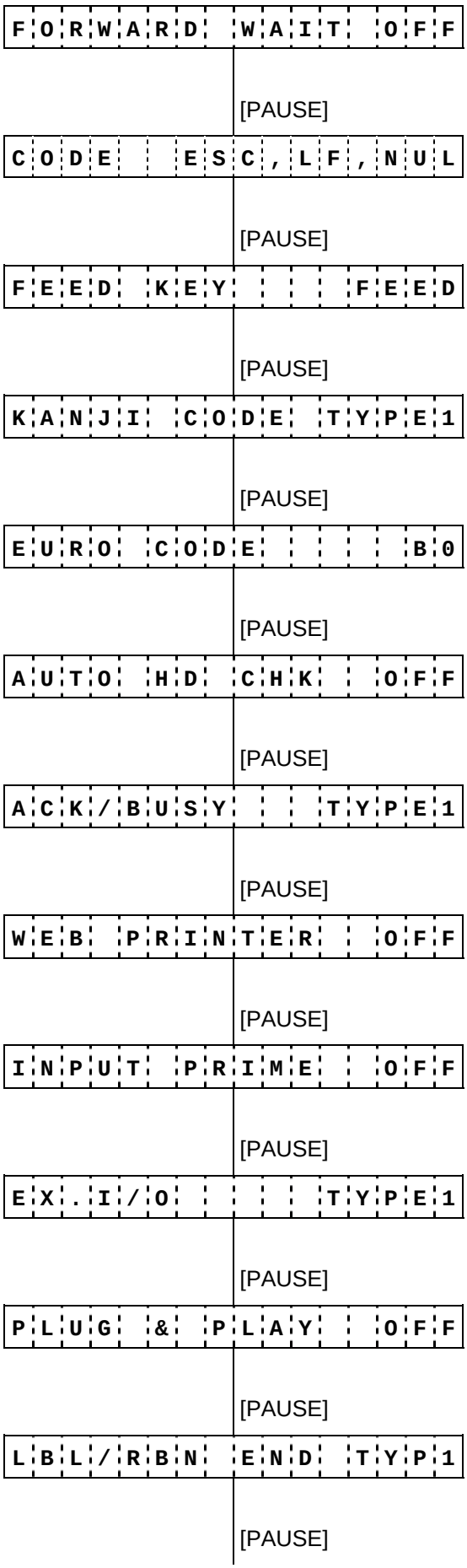
(18) Press the [PAUSE] key.

(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 feed standby setting:
Enable/disable the auto forward wait using the [FEED] and [RESTART] keys.
(24) Press the [PAUSE] key.

(25) Control code setting:
Select a control code using the [FEED] and [RESTART] keys.
(26) Press the [PAUSE] key.

(27) FEED key function setting:
Select a function of the [FEED] key using the [FEED] and [RESTART] keys.
(28) Press the [PAUSE] key.

(29) KANJI code setting:
Select a KANJI code using the [FEED] and [RESTART] keys.
(30) Press the [PAUSE] key.

(31) EURO code setting:
Select a EURO code using the [FEED] and [RESTART] keys.
(32) Press the [PAUSE] key.

(33) Auto print head check setting:
Enable/disable the auto print head check using the [FEED] and [RESTART] keys.
(34) Press the [PAUSE] key.

(35) Centronics ACK/BUSY timing setting:
Select an ACK/BUSY timing using the [FEED] and [RESTART] keys.
(36) Press the [PAUSE] key.

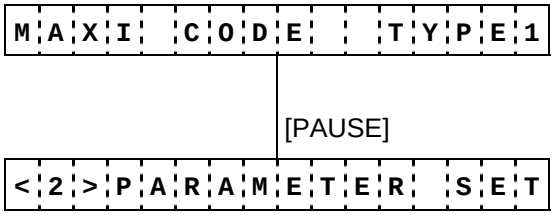
(37) Web printer function setting:
Enable/disable the web printer function using the [FEED] and [RESTART] keys.
(38) Press the [PAUSE] key.

(39) Input prime setting:
Enable/disable the reset process function using the [FEED] and [RESTART] keys.
(40) Press the [PAUSE] key.

(41) Expansion I/O interface setting:
Select an operation mode using the [FEED] and [RESTART] keys.
(42) Press the [PAUSE] key.

(43) Plug & Play setting:
Enable/disable the Plug & Play operation using the [FEED] and [RESTART] keys.
(44) Press the [PAUSE] key.

(45) Label end/ribbon error setting:
Select a label end or ribbon error operation using the [FEED] and [RESTART] keys.
(46) Press the [PAUSE] key.



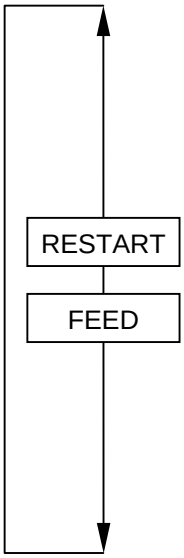
(47) MaxiCode specification setting:
Select a type of MaxiCode specification using the [FEED] and [RESTART] keys.

(48) Press the [PAUSE] key.

(49) The parameter setting menu is displayed.

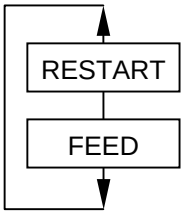
6.3.2 Details of Various Parameter Setting

(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

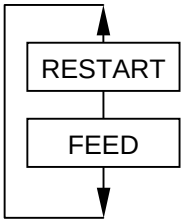
(2) Character zero (ZERO FONT)



- 0 (Without slash)
- Ø (With slash)

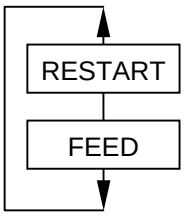
NOTE: *The following fonts do not support a zero with a slash. Therefore, even if a zero with a slash is selected, a zero without a slash is used.*
[Bit map fonts]
OCR-A, OCR-B, GOTHIC725 Black, Kanji, Chinese Kanji
[Outline fonts]
Price fonts 1, 2, and 3, DUTCH801 Bold, BRUSH738 Regular, GOTHIC725 Black,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

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



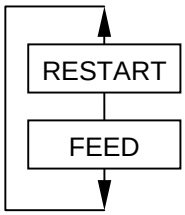
- 115200 bps
- 38400 bps
- 19200 bps
- 9600 bps
- 4800 bps
- 2400 bps

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



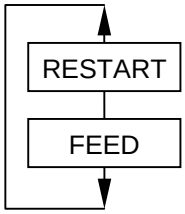
- 8 bits
- 7 bits

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



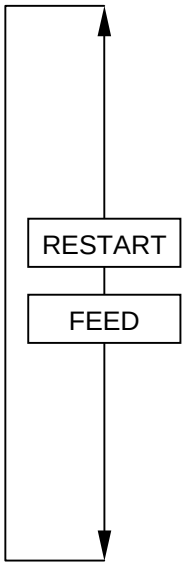
- 2 bits
- 1 bit

(6) RS-232C parity (PARITY)



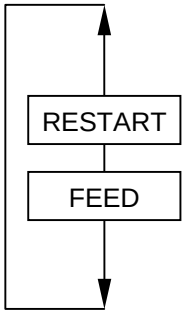
- EVEN
- ODD
- NONE (No parity)

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



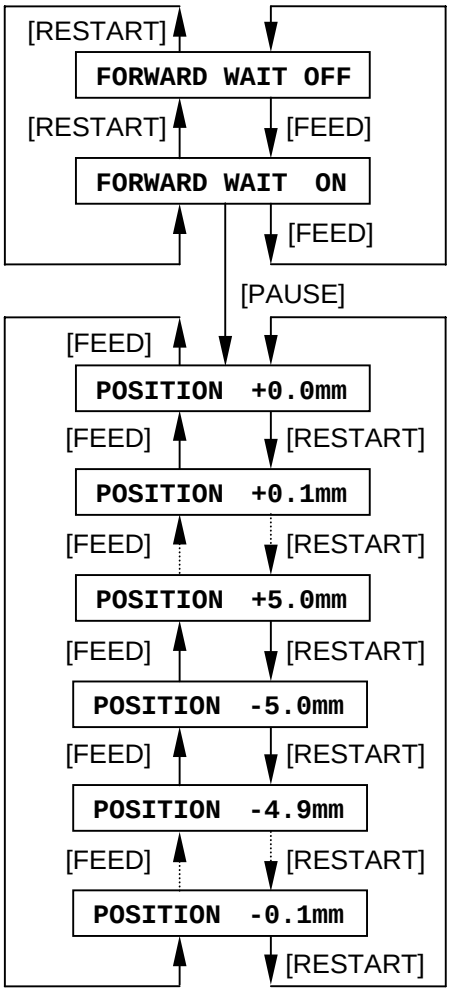
- XON/XOFF AUTO : XON/XOFF protocol
  (XON output when the power is on, XOFF output when the power is off)
- XON + READY AUTO : XON/XOFF + READY/BUSY (DTR) protocol
  (XON output when the power is on, XOFF output when the power is off)
- READY/BUSY : READY/BUSY (DTR) protocol
  (No XON output when the 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 feed standby (FORWARD WAIT)

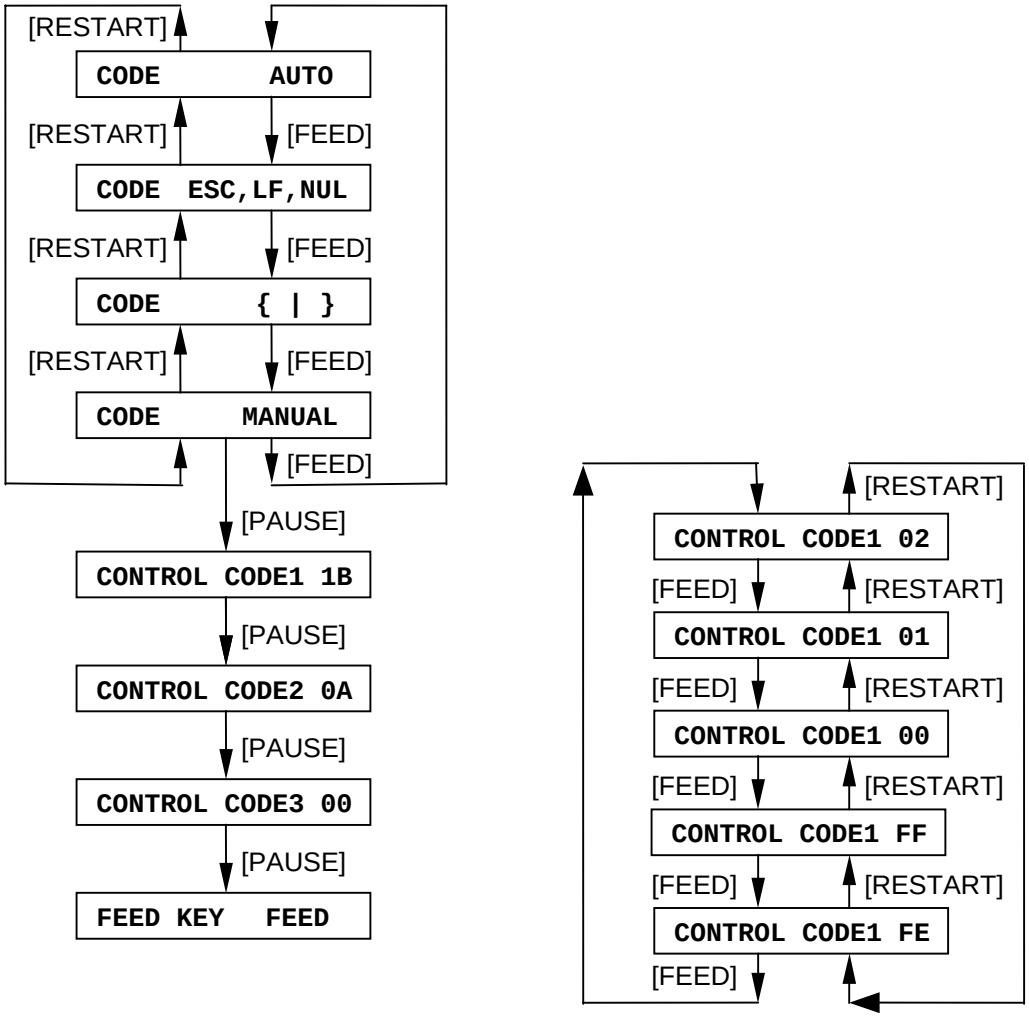


- OFF: Disabled
- ON: Enabled

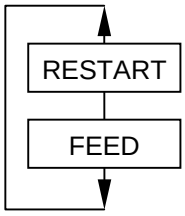
Setting for a fine adjustment value for a stop position of forward feed standby:

-5.0 mm to +5.0 mm
+: The printer feeds more media, then stops.
-: The printer feeds less media, then stops.

(10) Control code (CODE)

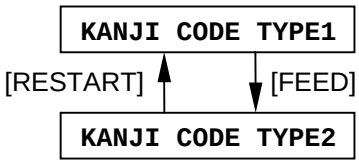


(11) FEED key function (FEED KEY)



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

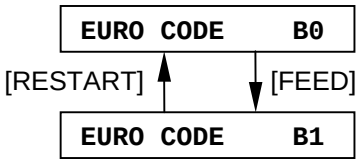
(12) KANJI code (KANJI CODE)



TYPE 1: For Windows codes

TYPE 2: For original codes

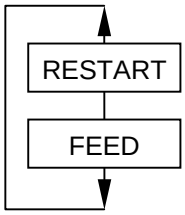
(13) EURO code (EURO CODE)



20H

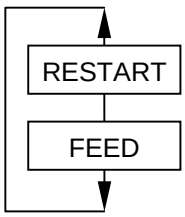
FFH

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



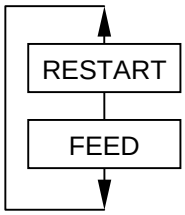
- OFF: An auto print head check is performed when the power is turned on.
- ON: An auto print head check is not performed when the power is turned on.

(15) Centronics ACK/BUSY timing (ACK/BUSY)



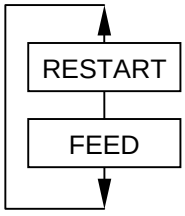
- TYPE 1 A rise of ACK signal and a release of BUSY occur at the same time.
- TYPE 2 A fall of ACK signal and a release of BUSY occur at the same time.

(16) Web printer function (WEB PRINTER)



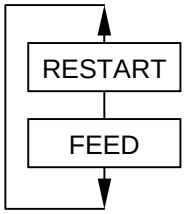
- OFF: Web printer function is disabled.
- ON: Web printer function is enabled.

(17) Input prime (INPUT PRIME)



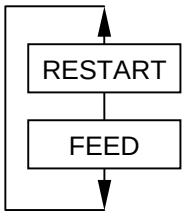
- OFF: The reset process is not performed.
- ON: The reset process is performed.

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



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

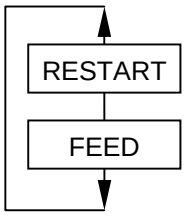
(19) Plug & Play (PLUG & PLAY)



- 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.*

(20) Label end/ribbon error (LBL/RBN END)



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

- TYP1: When a label end or a ribbon error 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 error]

- When a ribbon error 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 “RIBBON ERROR 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 error 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 error 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, “RIBBON ERROR 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 error 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 error 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 “RIBBON ERROR 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.

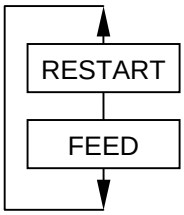
[Case 3] Number of total labels to be printed = 5
A ribbon error is detected while the 3rd label is printed.
The remaining label length is less than 30 mm.

(1st)(2nd)(3rd)
↑

After issuing the 3rd label completely, the printer stops, displaying "RIBBON ERROR 2".

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

(21) MaxiCode specification (MAXI CODE)



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

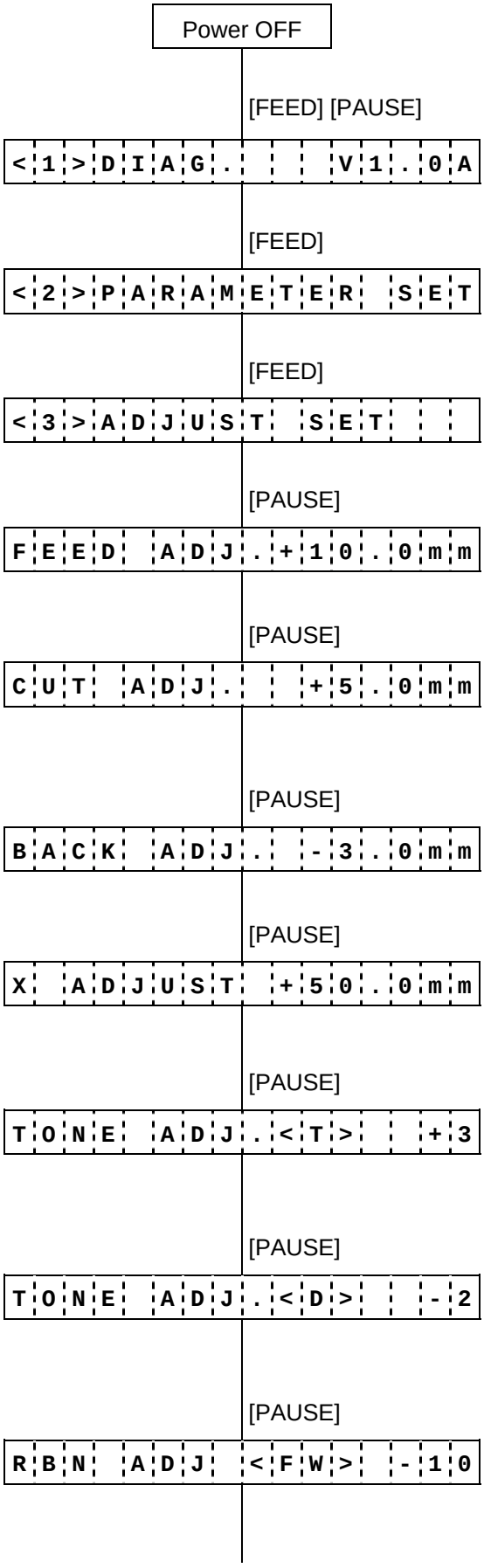
A mode specified by a command may be different from an actual mode, depending on the status of this parameter. Also, the data transmission method differs partly.
For details, refer to the B-852-TS22-QQ/QP-R External Equipment Interface Specification.

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.

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 amount fine adjustment:
Set a fine adjustment value using the [FEED] and [RESTART] keys.

(10) Press the [PAUSE] key.

(11) Cut position (stop position of the strip issue) 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.

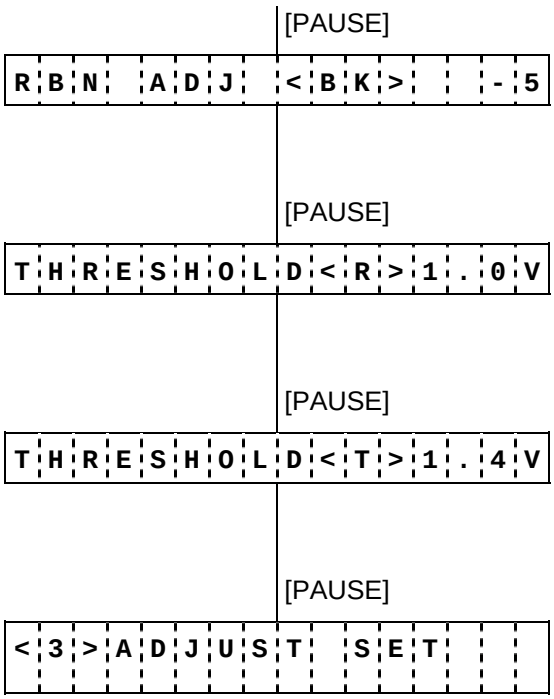
(17) Print tone fine adjustment (Thermal transfer print mode):
Set a fine adjustment value using the [FEED] and [RESTART] keys.

(18) Press the [PAUSE] key.

(19) Print tone 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) Lower reflective sensor manual threshold fine adjustment:
Set a fine adjustment value using the [FEED] and [RESTART] keys.

(26) Press the [PAUSE] key.

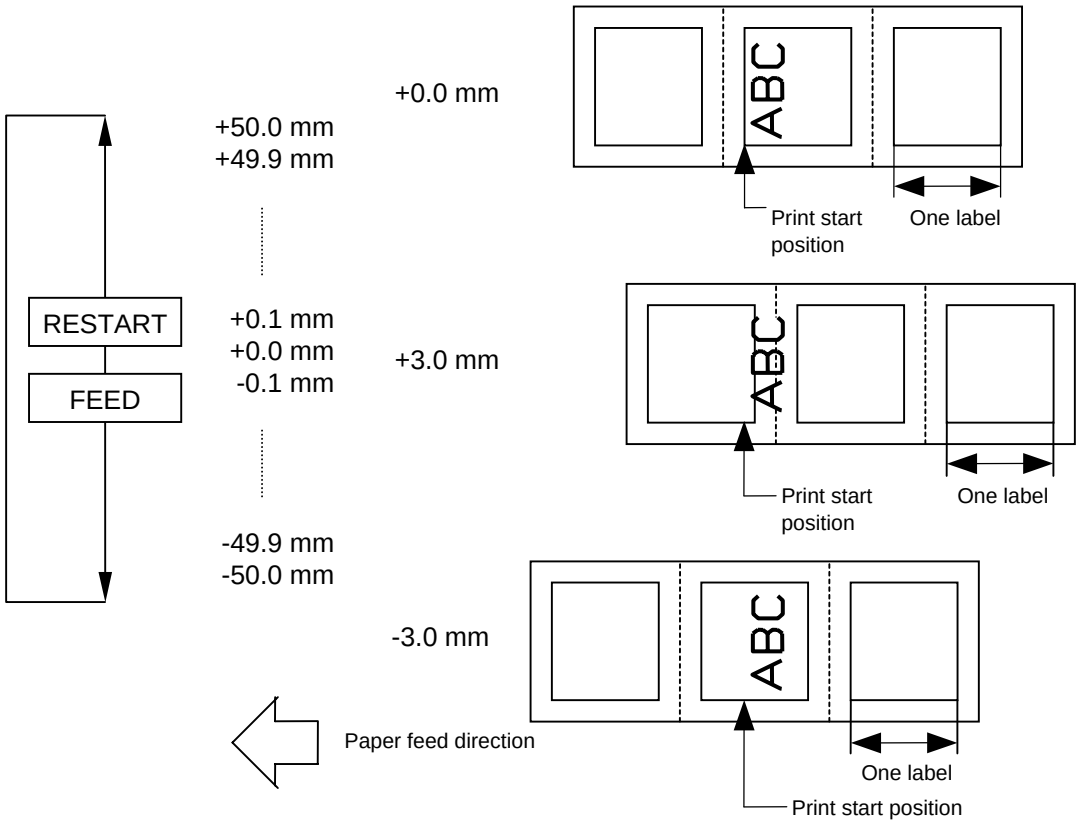
(27) Transmissive sensor manual threshold fine adjustment:
Set a fine adjustment value using the [FEED] and [RESTART] keys.

(28) Press the [PAUSE] key.

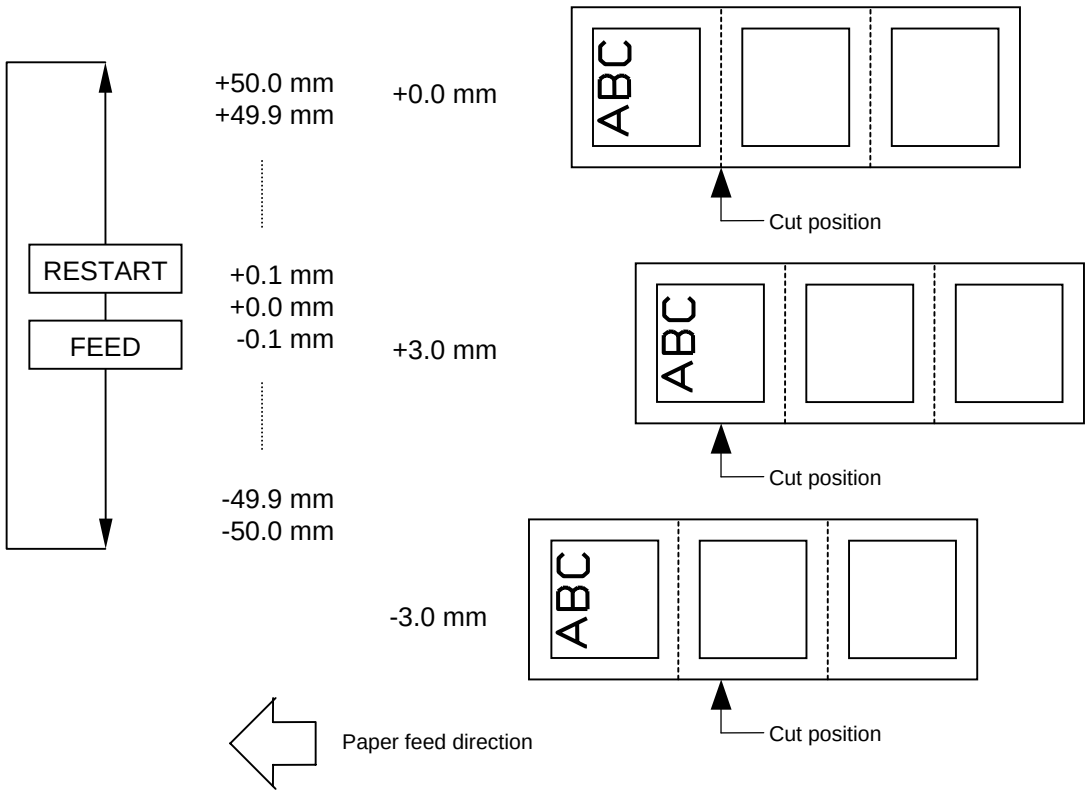
(29) The fine adjustment value setting menu is displayed.

6.4.2 Details of Fine Adjustment Value Setting

(1) Feed amount fine adjustment (FEED ADJ.)

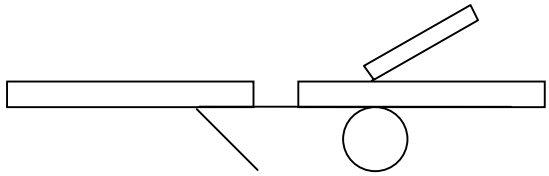


(2) Cut position (stop position of the strip issue) fine adjustment (CUT ADJ.)

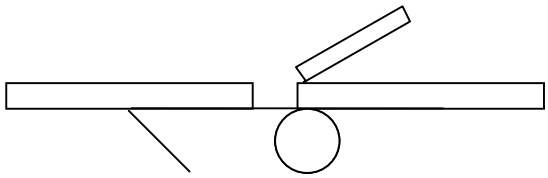


[Stop position fine adjustment for the strip issue]

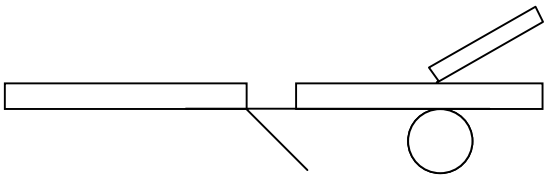
+0.0 mm

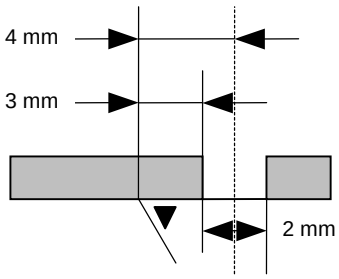


+3.0 mm



- 3.0 mm

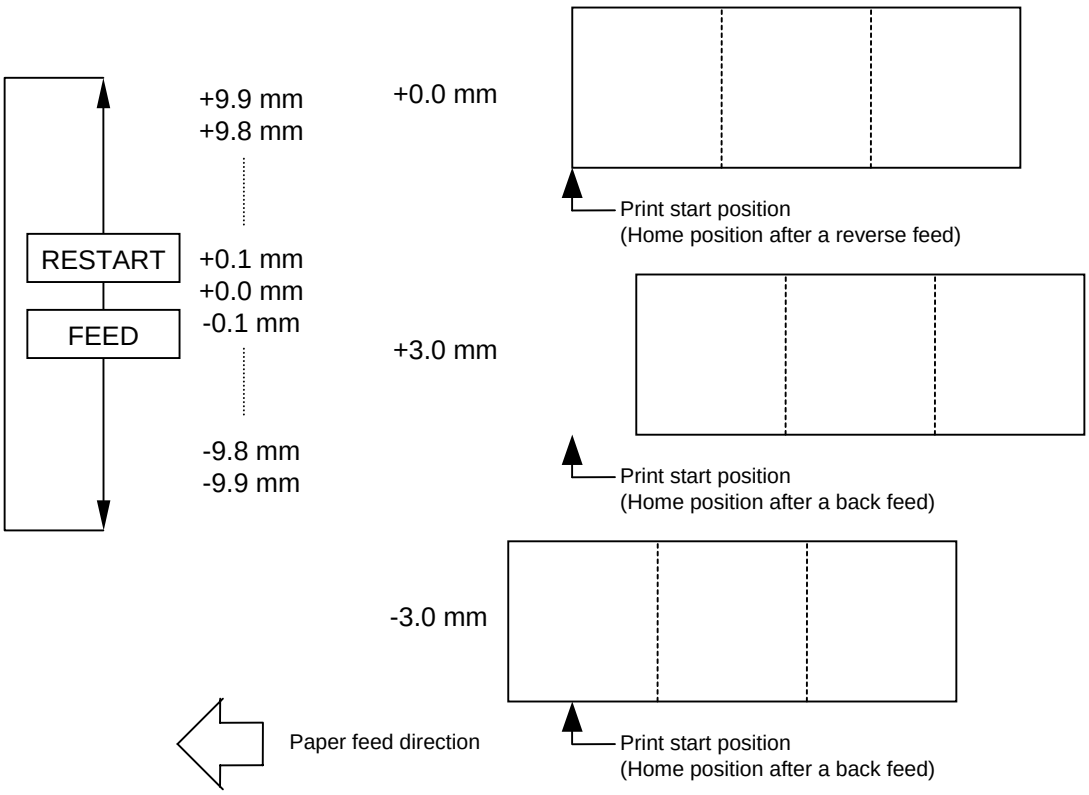




Assuming the label gap is 2 mm, the stop position of the strip issue is designed in a manner so that printing stops when the distance from the middle of the gap between labels to the end of the strip shaft is 4 mm.

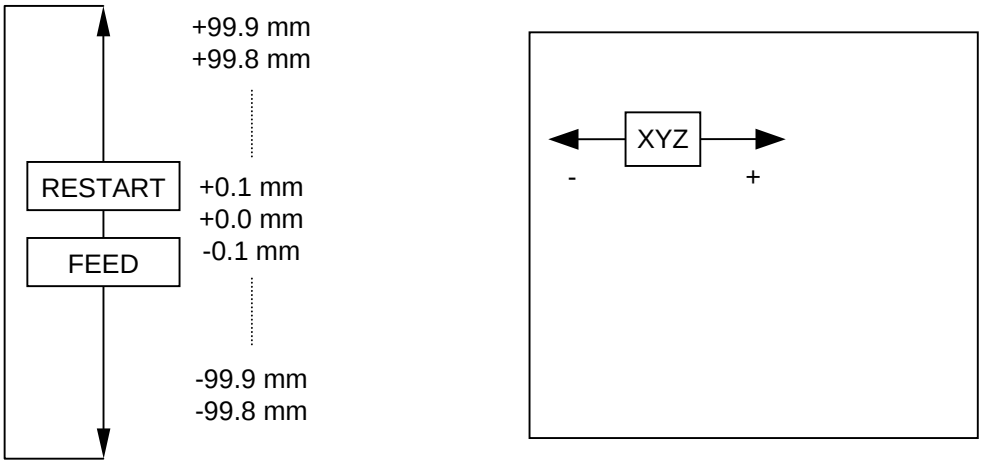
When the gap is more than 2 mm and the above-mentioned stop position is not proper, the stop position should be adjusted using the stop position fine adjust function for the strip issue.

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

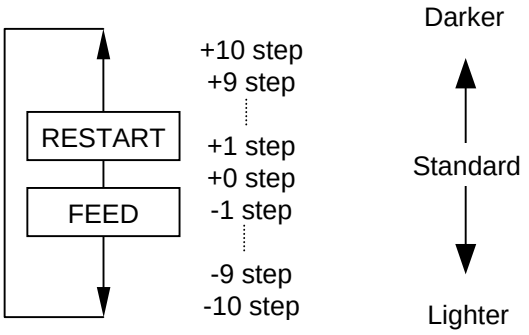


NOTE: *There may be cases where a label is not returned to the home position depending on the print conditions, even if a reverse feed amount is the same as a forward feed amount.*
When an operation including reverse feed (cut issue, strip issue for auto labeler, forward feed standby after an issue)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

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

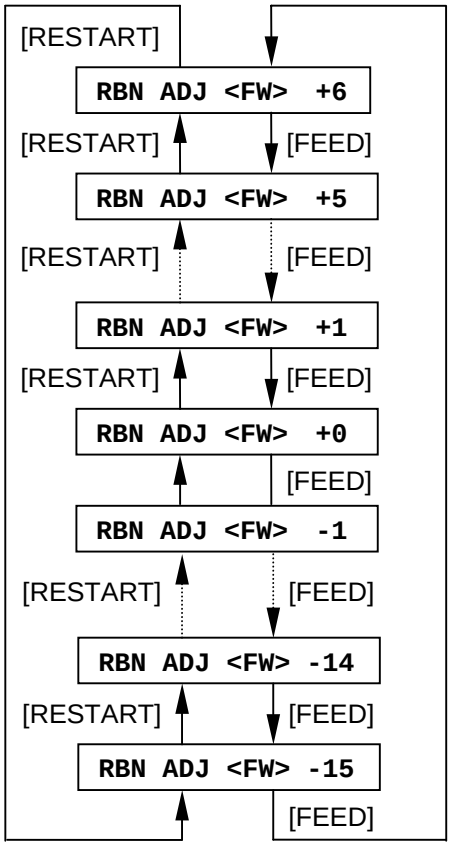


(5) Print tone fine adjustment (Thermal transfer/direct thermal) (TONE ADJ.)



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

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



+6 step (5% x 6 = +30%)

+5 step (5% × 5 = +25%)

+1 step (5% × 1 = +5%)

+0 step (Standard)

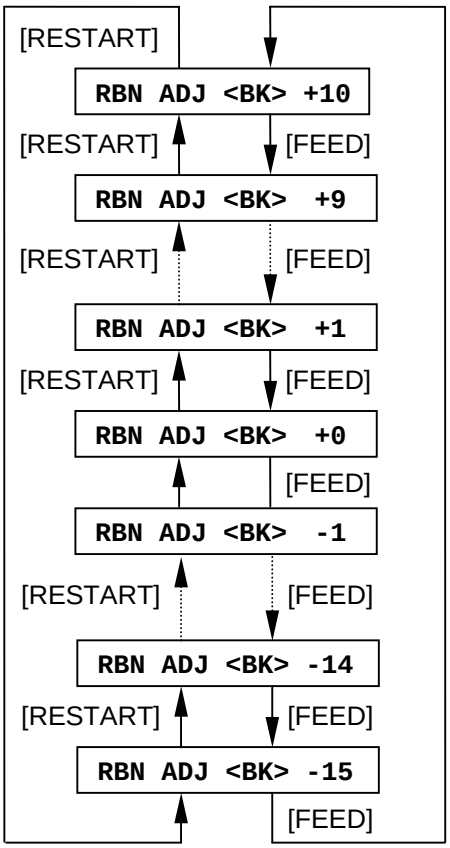
• -1 step (-5% x 1 = -5%)

-14 step (5% × -14 = -70%)

-15 step (5% × -15 = -75%)

• 1 step = 5%
• The maximum fine adjustment value in the positive (+) direction is +6.

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



+10 step (5% x 10 = +50%)

+9 step (5% × 9 = +45%)

+1 step (5% × 1 = +5%)

+0 step (Standard)

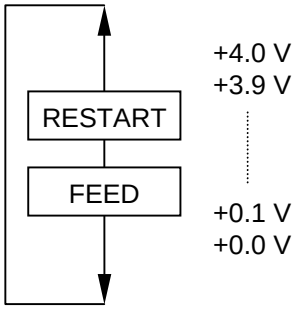
-1 step (-5% x 1 = -5%)

-14 step (5% × -14 = -70%)

-15 step (5% × -15 = -75%)

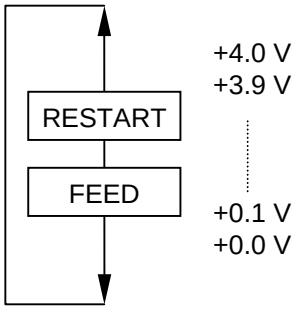
- 1 step = 5%
- The maximum fine adjustment value in the positive (+) direction is +10.

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



NOTE: *If "0.0 V" is set, the value "0.0 V" is automatically corrected to the initial 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 automatically corrected to the initial 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
  Stop position fine adjustment for the strip issue ..... ±50.0 mm
  Reverse feed fine adjustment ..... ±9.9 mm
  Print tone fine adjustment
  Thermal transfer ..... ±10 step
  Thermal direct ..... +6 step, -10 step
  X-coordinate fine adjustment ..... ±99.9 mm
  Ribbon motor drive voltage fine adjustment (Take-up) ..... -15 to +6 step
  Ribbon motor drive voltage fine adjustment (Feed) ..... -15 to +10 step

- An X-coordinate fine adjustment is performed to finely adjust the X-coordinate of a drawing in the left or right direction within an effective print width range. (If a value is set to less than coordinate 0 as a result of the fine adjustment, further fine adjustment in the negative (-) direction will not be accepted.)
- 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 tone 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 the system mode (by key operation). The range of fine adjustment value for each motor is as follows:

  Ribbon take-up motor: +6 to -15
  Ribbon feed motor: +10 to -15

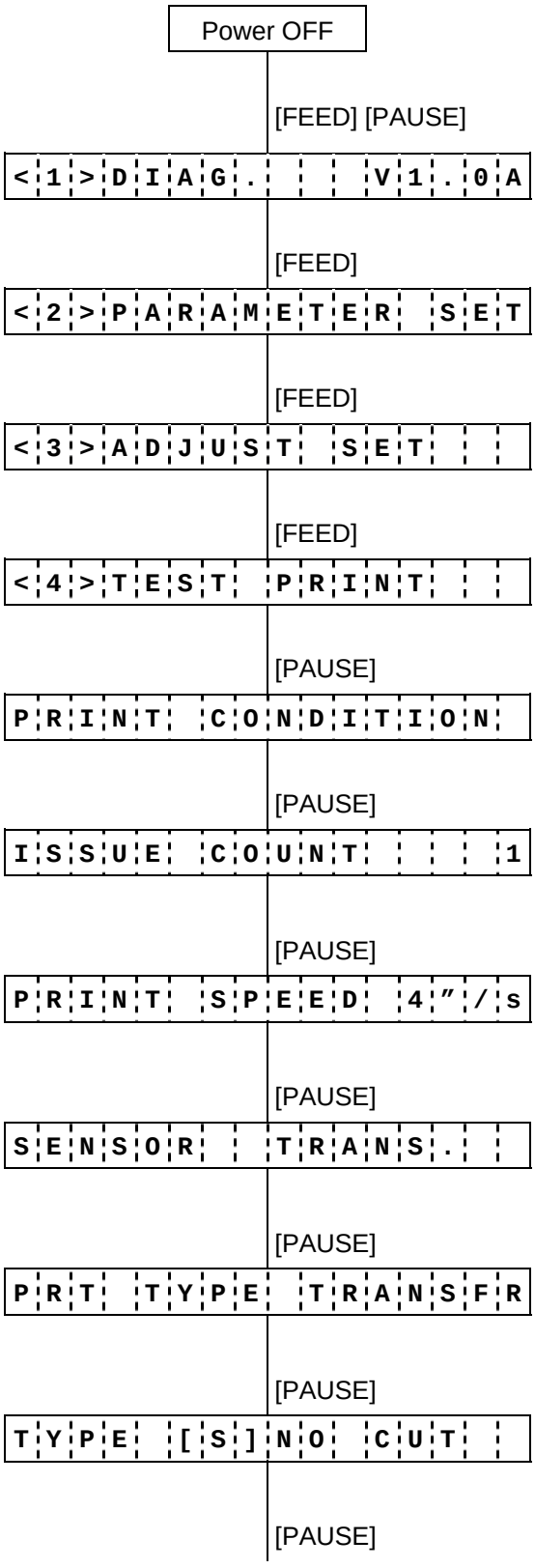
- A print tone fine adjustment value is a sum of a fine adjustment value by a command (from the PC) and a fine adjustment value in system mode (by key operation). The maximum fine adjustment value of each print method is as follows:

  Thermal transfer: ±10
  Thermal direct: +6, -10

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.

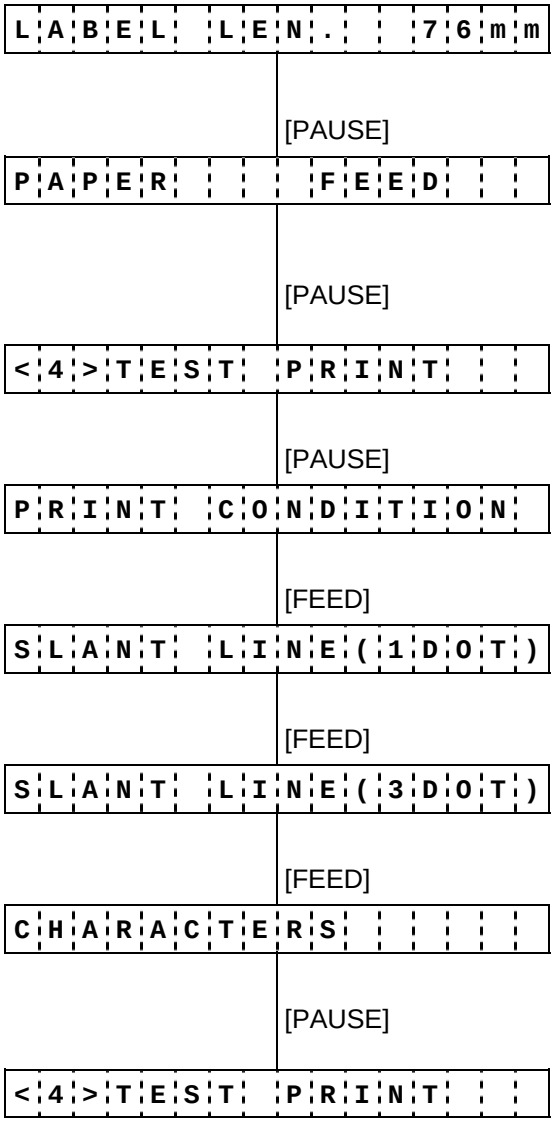
(18) Press the [PAUSE] key.

(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

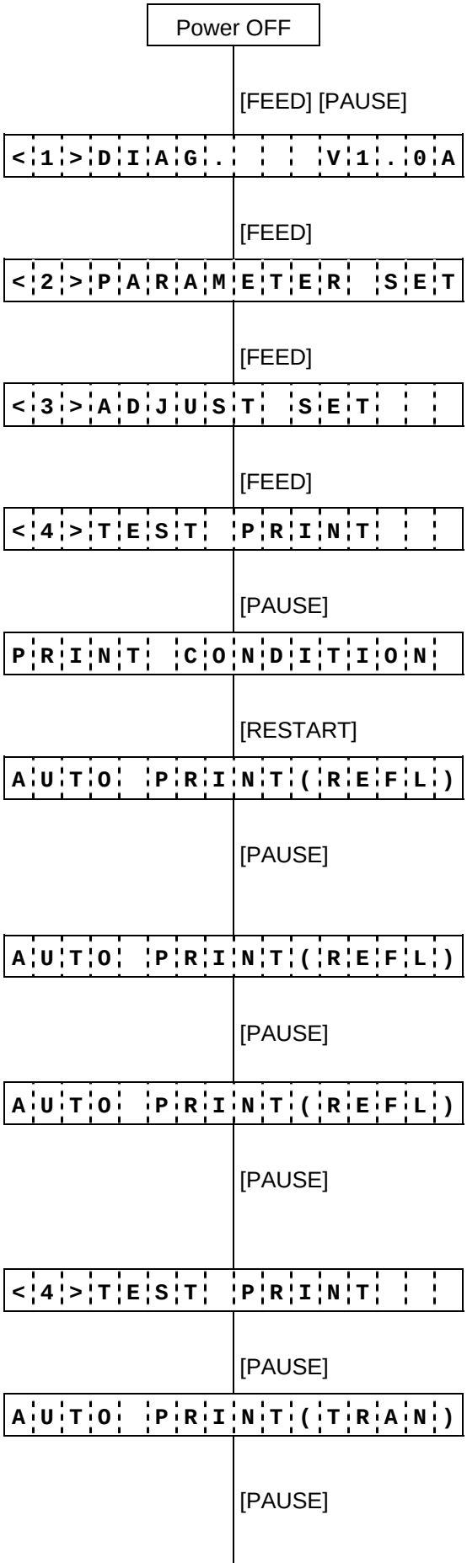
(34) Press the [FEED] key.

(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
(Lower 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
(Lower reflective sensor)

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

(17) Assembly process automatic print mode
(Lower reflective sensor)

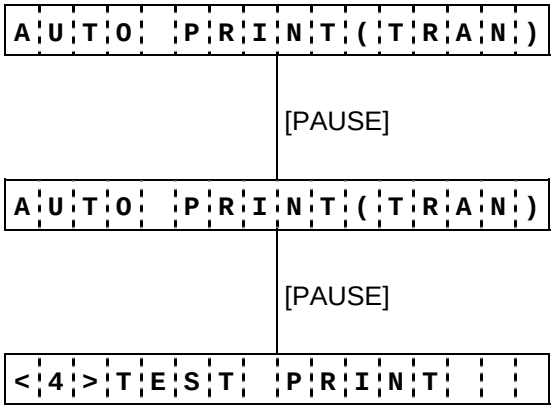
(18) Press the [PAUSE] key.
(Characters: 5 labels are printed.)

(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.)

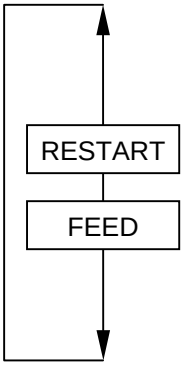
(25) Assembly process automatic print mode (Transmissive sensor)

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

(27) System mode menu display
(Test print)

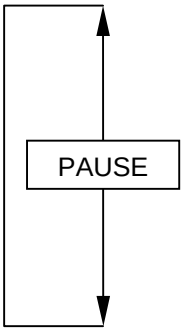
6.5.2 Details of Test Print Setting

(1) Test print mode



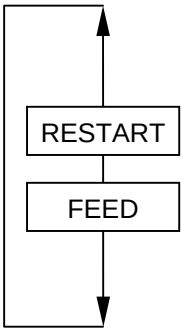
- PRINT CONDITION (Test print condition parameters)
- SLANT LINE(1DOT) (1-dot slant line print)
- SLANT LINE(3DOT) (3-dot slant line print)
- CHARACTERS (Character print)
- BARCODE (Bar code print)
- NON-PRINTING (Nothing prints.)
- FACTORY TEST (Line print for assembly process)
- AUTO PRINT(TRAN) (Assembly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

(2) Test print condition parameters (PRINT CONDITION)



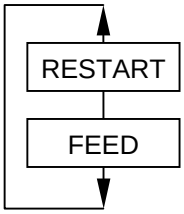
- ISSUE COUNT (Issue count)
- PRINT SPEED (Print speed)
- SENSOR (Sensor)
- PRT TYPE (Print method)
- TYPE (Issue mode)
- LABEL LEN. (Label length)
- PAPER FEED (Paper feed mode)
- <4> TEST PRINT (Test print mode)
- PRINT CONDITION (Test print condition parameters)

(3) Issue count (ISSUE COUNT)



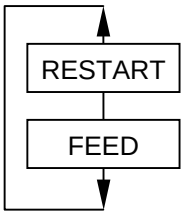
- 5000 (Issue count: 5000)
- 1000 (Issue count: 1000)
- 500 (Issue count: 500)
- 100 (Issue count: 100)
- 50 (Issue count: 50)
- 10 (Issue count: 10)
- 5 (Issue count: 5)
- 3 (Issue count: 3)
- 1 (Issue count: 1)

(4) Print speed (PRINT SPEED)



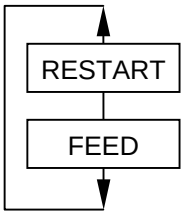
- 4 ips (4 inches/sec)
- 2 ips (2 inches/sec)

(5) Sensor (SENSOR)



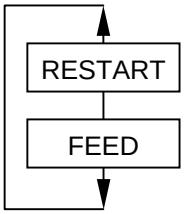
- NONE (No sensors used)
- REFLECT. (Lower reflective sensor)
- TRANS. (Transmissive sensor)

(6) Print method (PRT TYPE)



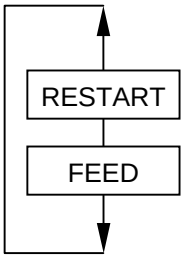
- TRANSFR (Thermal transfer)
- DIRECT (Direct thermal)

(7) Issue mode (TYPE)



- [S] NO CUT (Batch issue mode)
- [C] WITH CUT (Cut issue mode)

(8) Label length (LABEL LEN.)

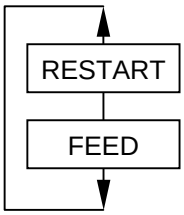


- 999 (Label length: 999 mm)
- 998 (Label length: 998 mm)
- 997 (Label length: 997 mm)

⋮

- 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 initial values after the power is turned off and on again

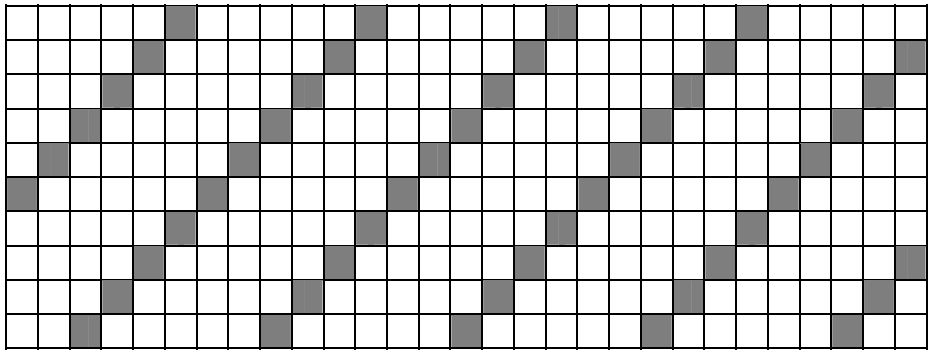
- Menu selection: Test print condition parameter setting
- Issue count (ISSUE COUNT): 1
- Print speed (PRINT SPEED): 4 ips
- Sensor (SENSOR): Transmissive sensor
- Print type (PRT TYPE): Thermal transfer print mode
- Issue type (TYPE): Batch issue
- Label length (LABEL LEN.): 76 mm
- Paper feed (PAPER):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

(11) Supplementary explanations

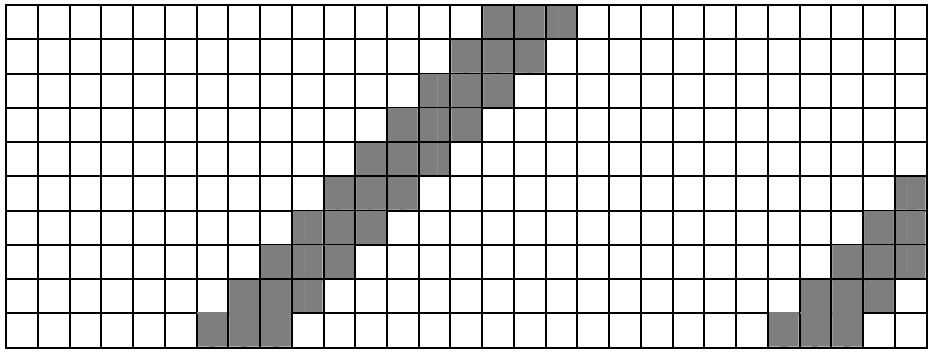
- When the [FEED] and [RESTART] keys are pressed at the same time, the display shows the system mode menu.
- If the [RESTART] or [FEED] key is held down for 0.5 seconds or more when a parameter is being set or a menu is being selected, the printer enters repeat mode, in which the key is entered repeatedly.
- 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 which is larger than the image buffer length is not acceptable. If such label length is set, the printer prints as long data as the image buffer length then stops, or the printer stops because of an error.
- 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: 4 ips
  - Sensor: Lower reflective sensor or transmissive sensor
  - Print type: Thermal transfer print mode
  - Issue mode: Batch issue
  - Label length: 76 mm
  - Print tone fine adjustment value: -1
- When the transmissive sensor is selected, the gap length between labels should be 3 mm.

- Enlarged view of slant lines

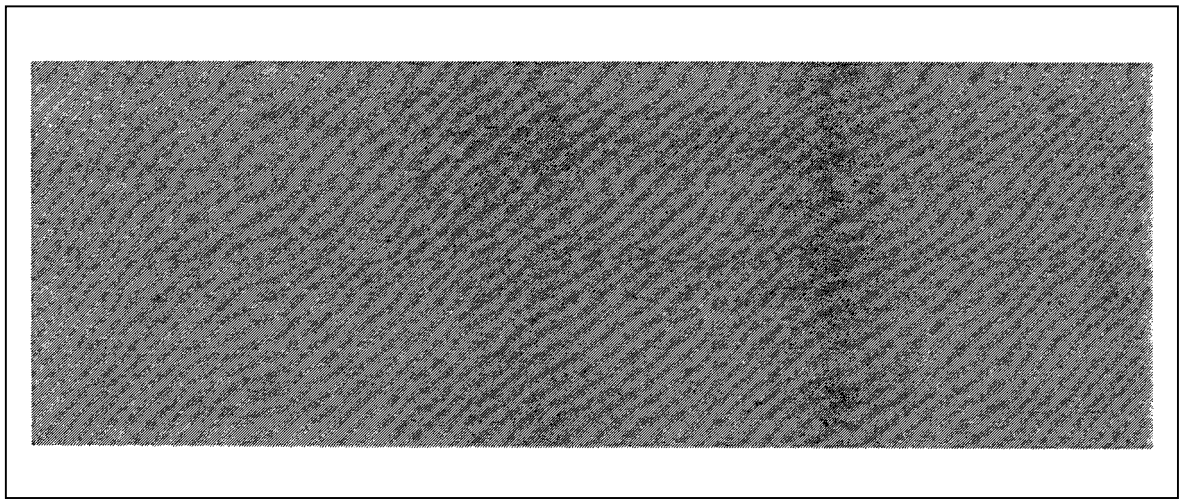
1-dot slant line print (Print ratio: 16.7%)



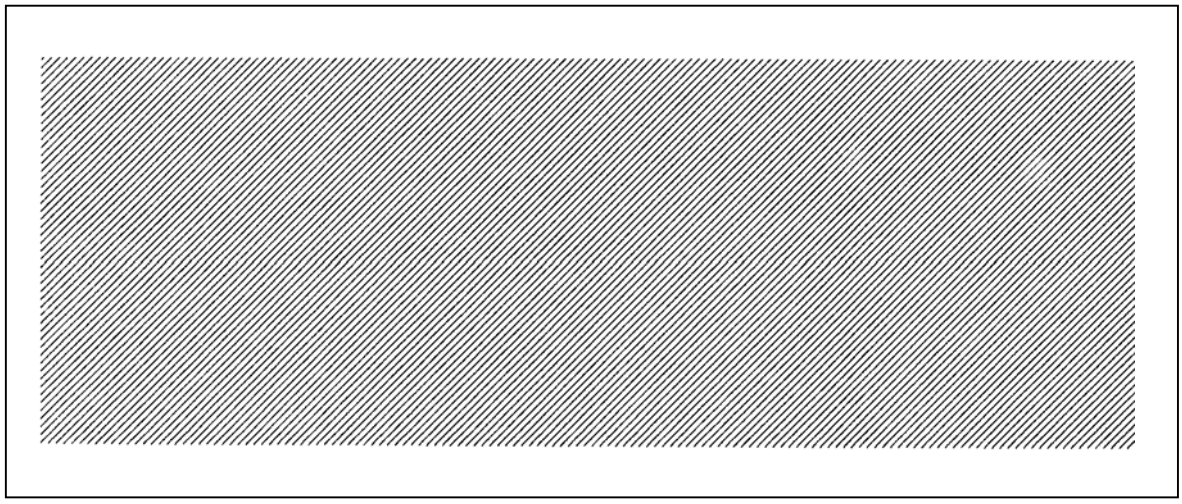
3-dot slant line print (Print ratio: 16.7%)



6.5.3 Test Print Samples



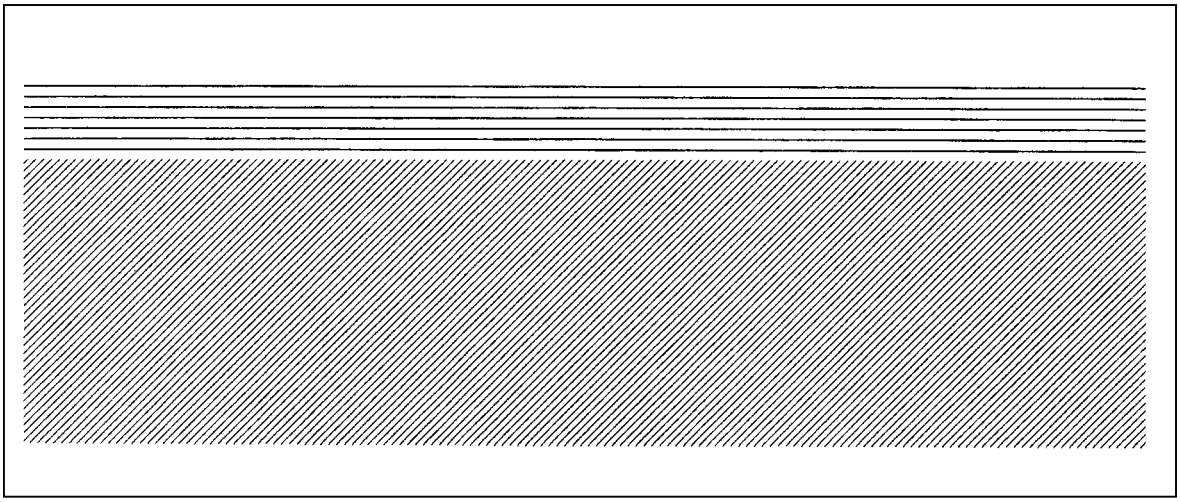
1-dot slant line print



3-dot slant line print

Character print

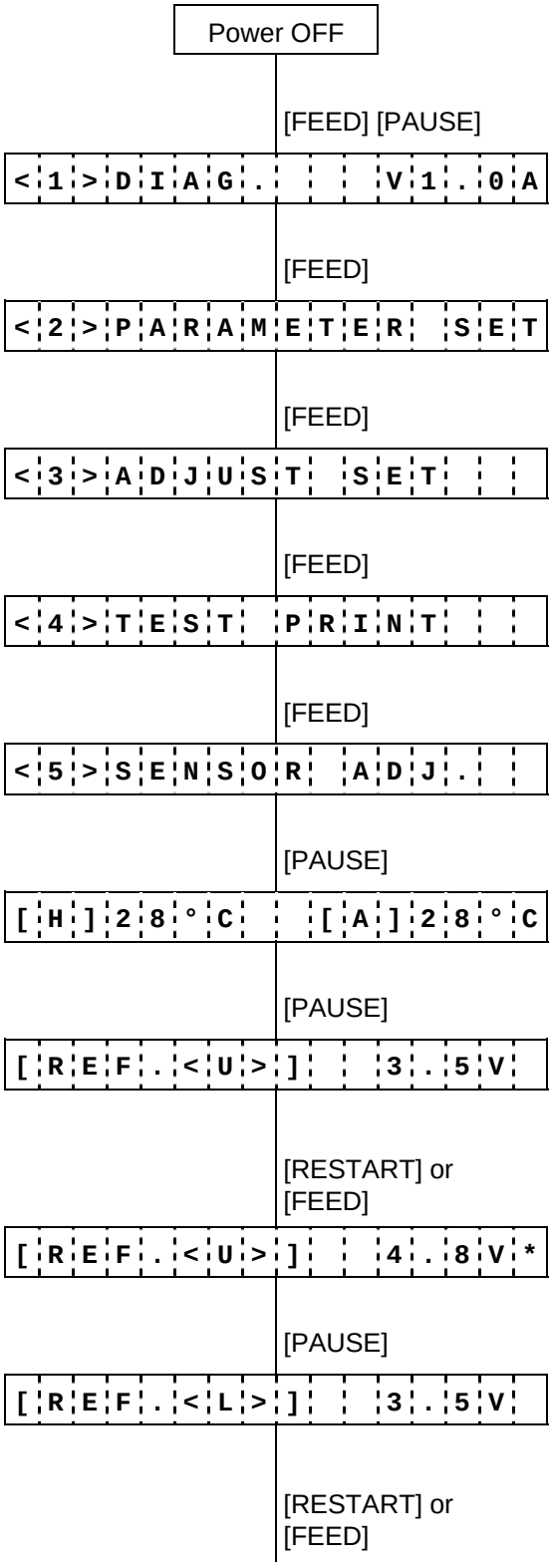
Bar code print



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/ambient temperature is displayed.

(14) Press the [PAUSE] key.

(15) Upper reflective sensor value is displayed. Load tag paper so that the sensor does not detect a black mark.

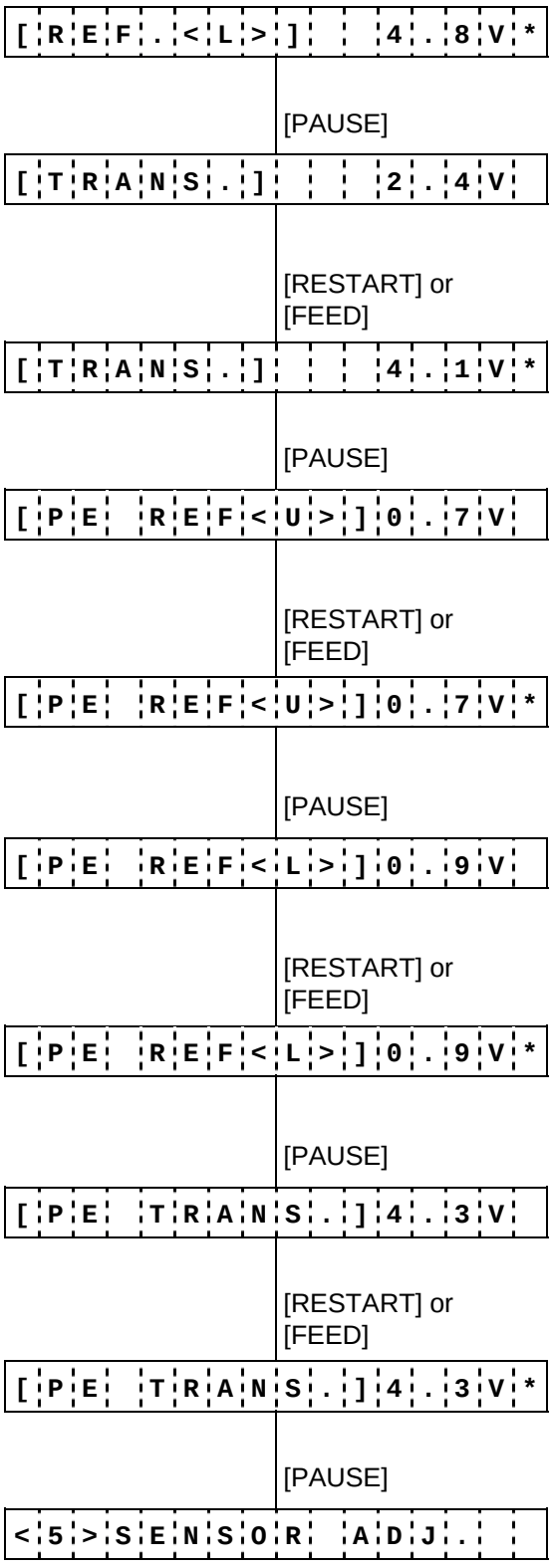
(16) Hold down the [RESTART] or [FEED] key for 3 seconds or more.

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

(18) Press the [PAUSE] key.

(15) Lower reflective sensor value is displayed. Load tag paper so that the sensor does not detect a black mark.

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



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

(18) Press the [PAUSE] key.

(19) Transmissive sensor value is displayed.
Remove a few labels and place the backing paper so that sensor can detect backing paper.

(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) Upper reflective sensor value (no paper level) is displayed.
Remove any paper covering the sensor.

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

(25) "*" is displayed when the upper reflective sensor adjustment (no paper level) is completed.

(26) Press the [PAUSE] key.

(23) Lower reflective sensor value (no paper level) is displayed.
Remove any paper covering the sensor.

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

(25) "*" is displayed when the lower reflective sensor adjustment (no paper level) is completed.

(26) Press the [PAUSE] key.

(27) Transmissive sensor value (no paper level) is displayed.

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

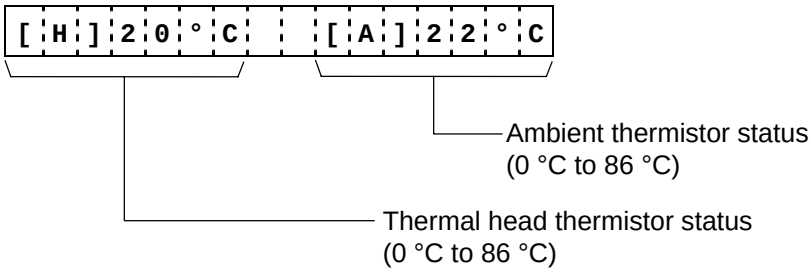
(29) "*" is displayed when the transmissive sensor adjustment (no paper level) is completed.

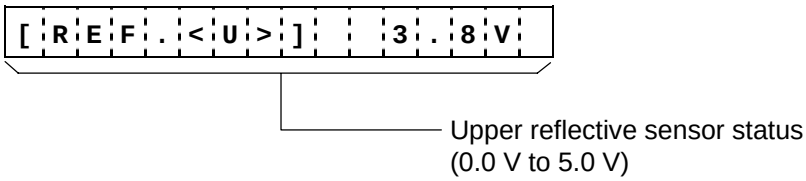
(30) Press the [PAUSE] key.

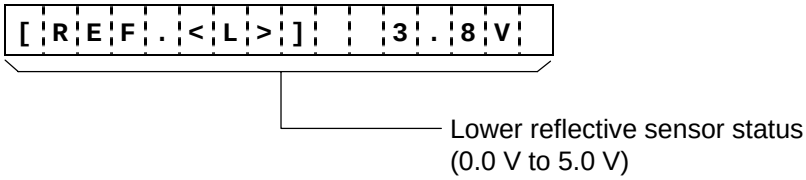
(31) System mode menu display
(Sensor display/adjustment)

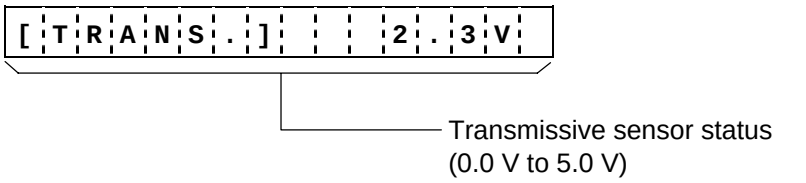
6.6.2 Details of Sensor Adjustment Value Display

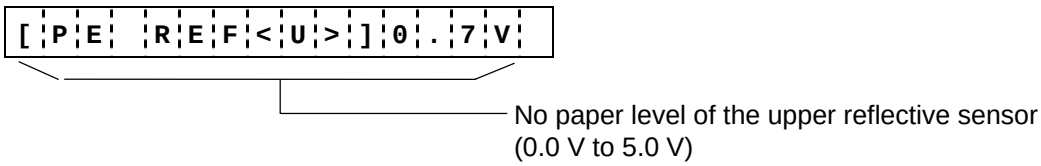
(1) Sensor adjustment value display

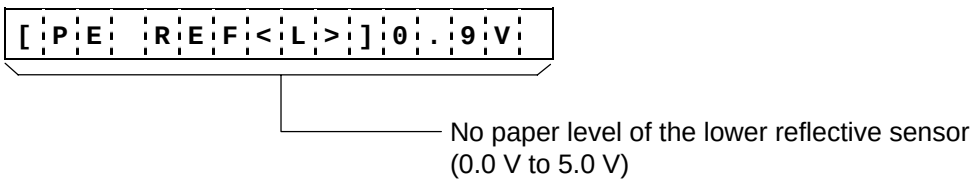


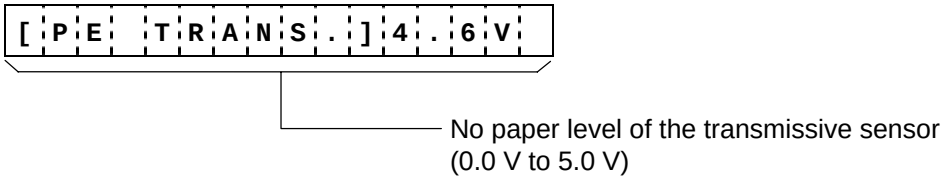










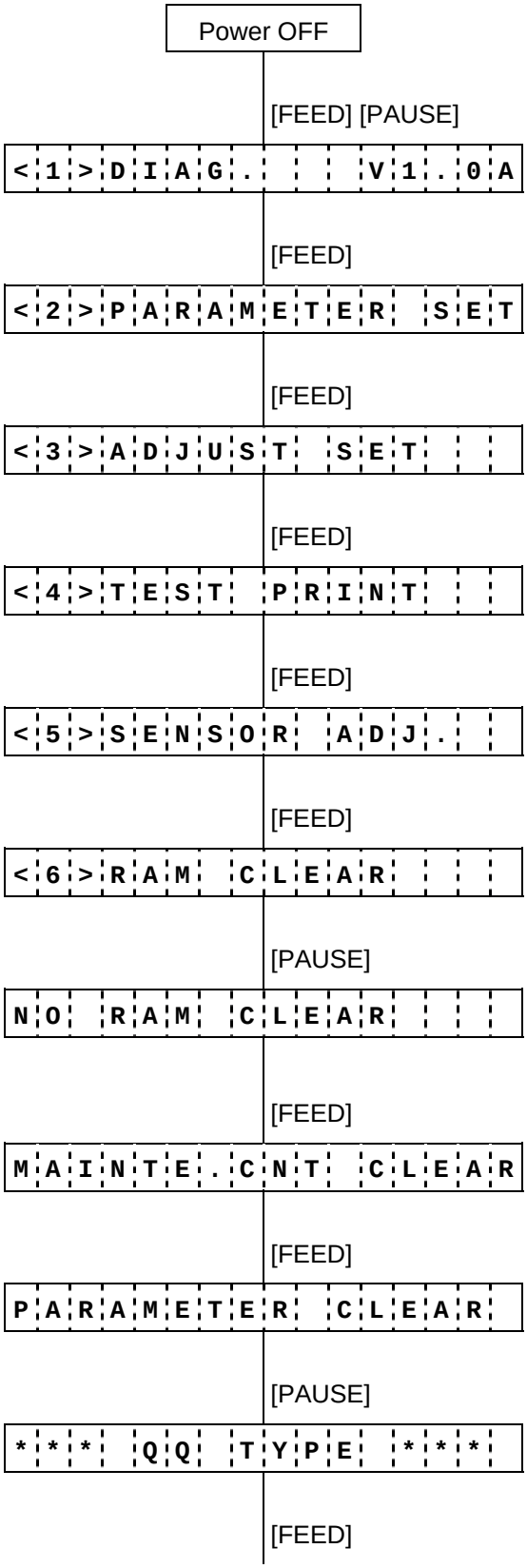


(2) Supplementary explanations

- 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 [FEED] key.

(17) Maintenance counter clear mode

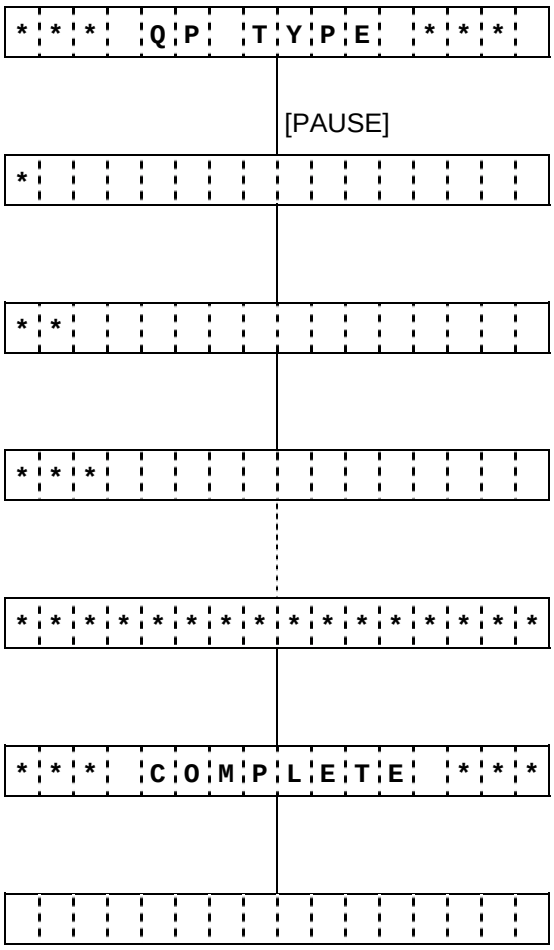
(18) Press the [FEED] key.

(19) Parameter clear mode

(20) Press the [PAUSE] key.

(21) RAM clear for the QQ type

(22) Press the [FEED] key.



(21) RAM clear for the QP type

(22) Press the [PAUSE] key.

(23) Parameter clear is executed.

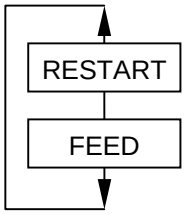
(24) Progress display

(25) Parameter clear is complete.

(26) Turn the power off.

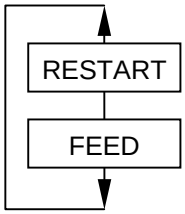
6.7.2 Details of RAM Clear

(1) RAM clear mode



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

(2) Destination type



- QQ TYPE (for North/South America)
- QP TYPE (for Europe/Asia/China)

(3) 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.
- Destination type is printed on the upper right area of a maintenance counter and parameter settings print out.

(4) Values after maintenance counter clear

Item	Value
Label distance covered	0 km
Print distance	0 km
Cut 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

(5) Values after parameter clear

Parameter		Value
Feed amount fine adjustment (PC)		0 mm
Cut position (stop position of the strip issue) fine adjustment (PC)		0 mm
Reverse feed amount fine adjustment (PC)		0 mm
Print tone fine adjustment: Thermal transfer print mode (PC)		0
Print tone 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 amount fine adjustment (Key)		0 mm
Cut position (stop position of the strip issue) fine adjustment (Key)		0 mm
Reverse feed amount fine adjustment (Key)		0 mm
Print tone fine adjustment: Thermal transfer print mode (Key)		0
Print tone fine adjustment: Direct thermal print mode (Key)		0
Ribbon motor drive voltage fine adjustment (Take-up) (Key)		0
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
Lower 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	QP type	XON/XOFF + READY/BUSY (DTR) protocol: (XON output when the power is on, XOFF output when the power is off)
	QQ type	READY/BUSY (DTR) protocol
LCD language		English
Auto forward feed standby		ON
Control code		Auto
FEED key function		FEED (Feeds one label.)
KANJI code		TYPE1
EURO code		B0H
Auto print head check		OFF
Centronics ACK/BUSY timing		TYPE1

Parameter		Value
Web printer function		OFF (Disabled)
Input prime		ON
Expansion I/O operation mode		Normal
Plug & Play	QP type	OFF
	QQ type	ON
Label end/ribbon error		The printer stops an issue operation.
MaxiCode specification		TYPE1 (Compatible with the current version)
Automatic calibration		OFF
LAN enable/disable		LAN: Enable, SNMP: Enable
Status response		ON
Label pitch		76.2 mm
Effective print length		74.2 mm
Effective print width		216.8 mm
Print method		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
RTC low battery check		OFF
RTC data renewal timing		BATCH

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

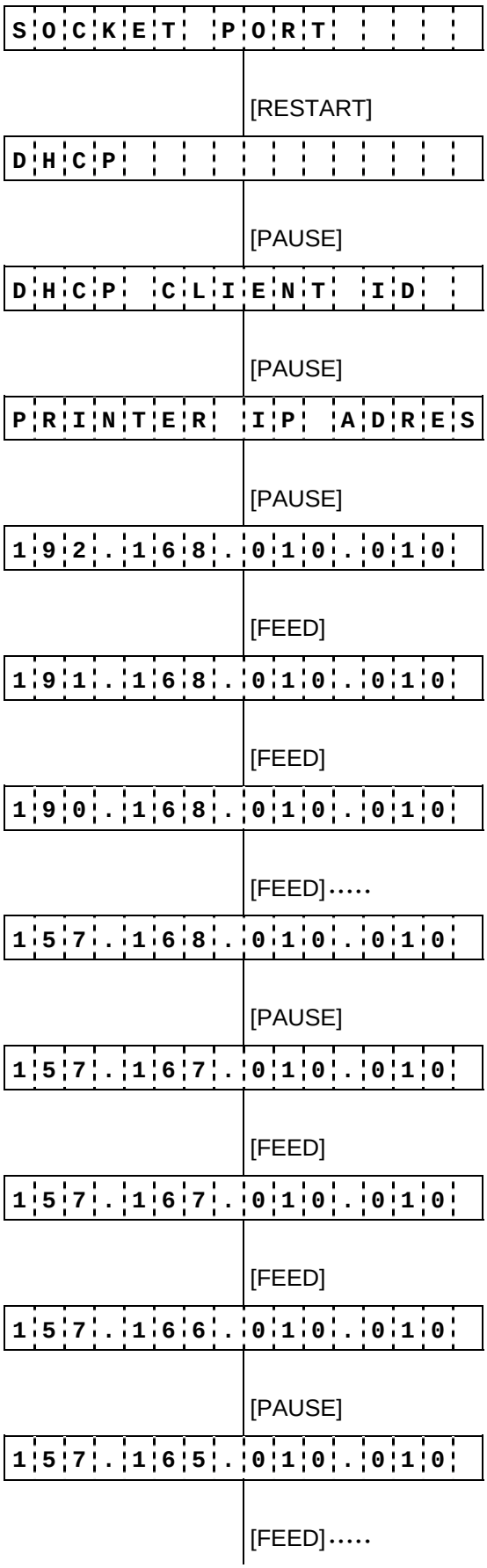
(18) Press the [RESTART] key.

(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

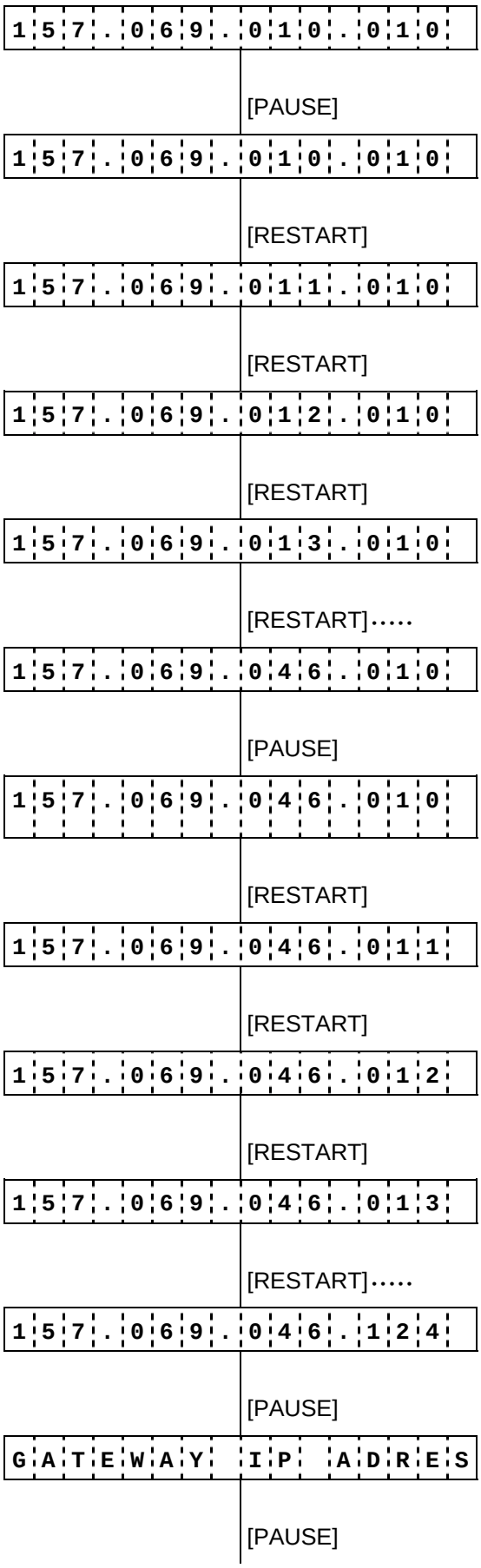
(42) Press the [FEED] key.

(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

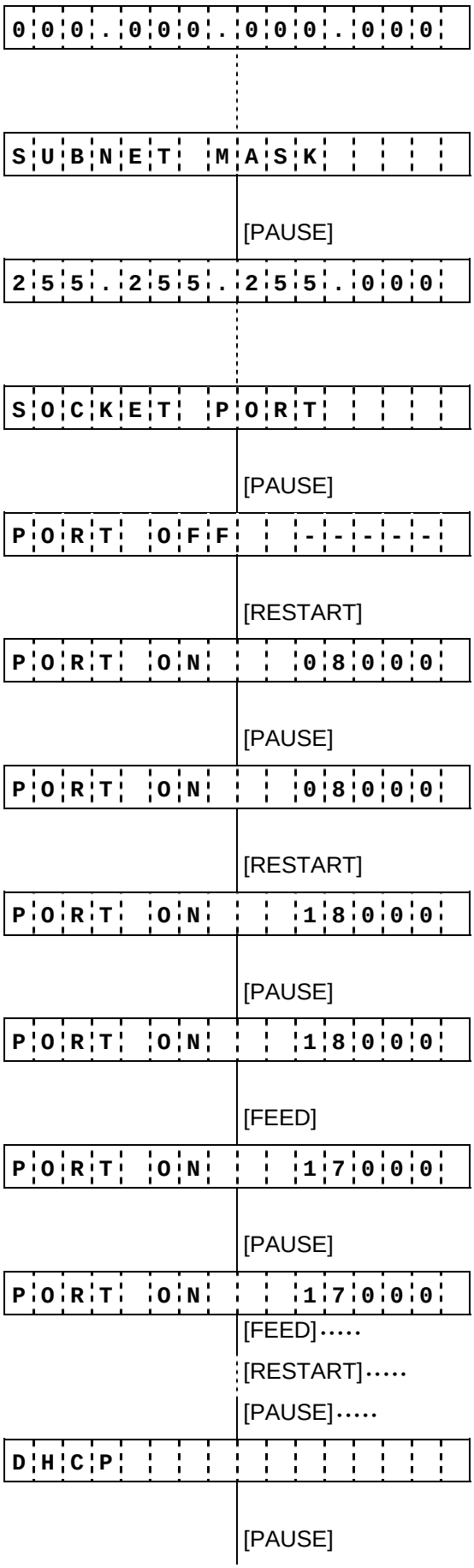
(66) Press the [RESTART] key.

(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.

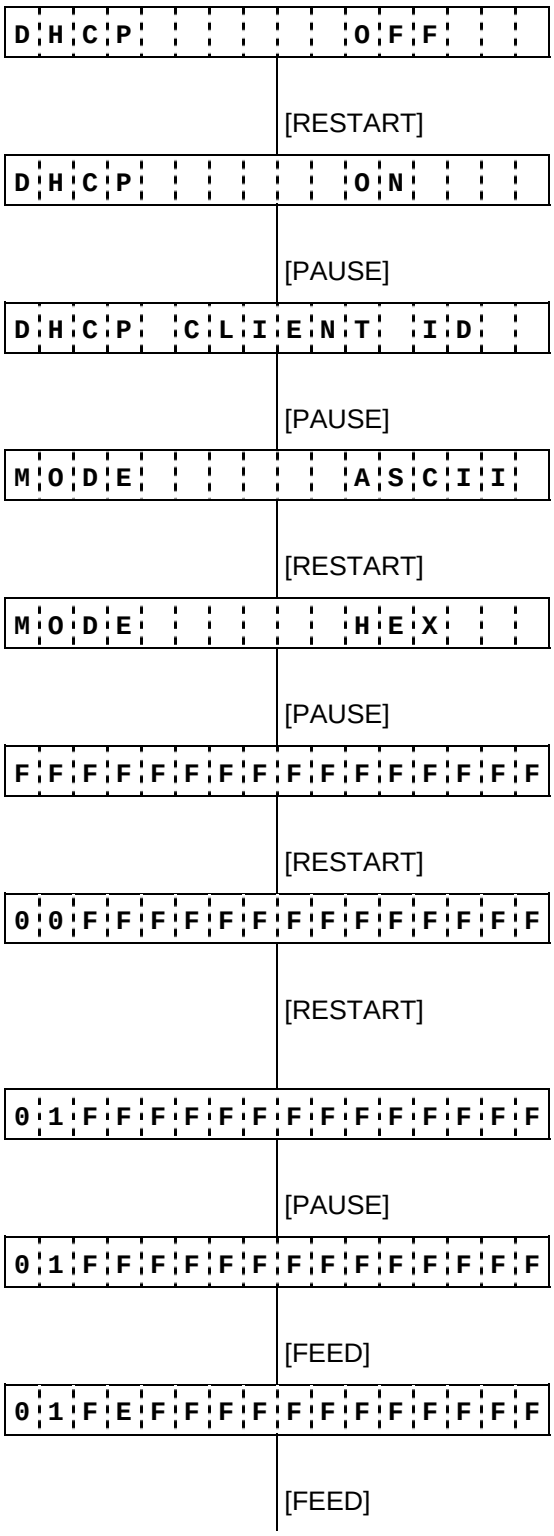
(90) Press the [PAUSE] key.

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

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

(93) DHCP setting

(94) Press the [PAUSE] key.



(95) DHCP setting (Disabled)

(96) Press the [RESTART] key.

(97) DHCP setting (Enabled)

(98) Press the [PAUSE] key.

(99) DHCP client ID setting

(100) Press the [PAUSE] key.

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

(102) Press the [RESTART] key.

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

(104) Press the [PAUSE] key.

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

(106) Press the [RESTART] key.

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

(108) Press the [RESTART] key.

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

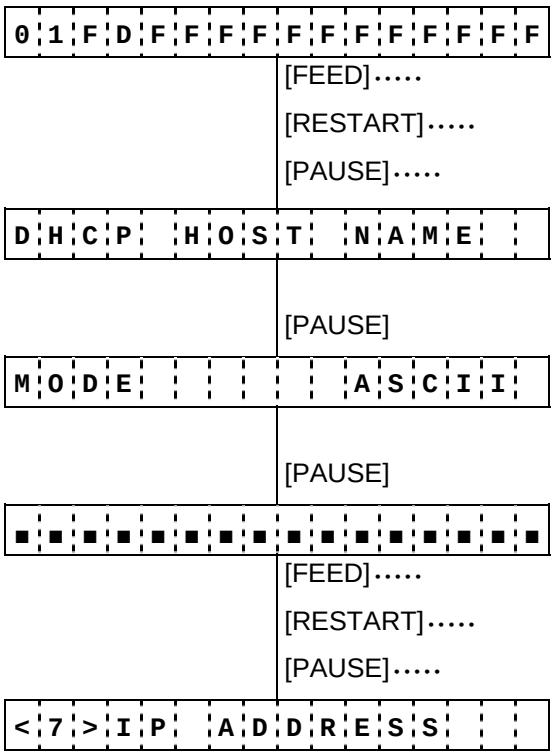
(110) Press the [PAUSE] key.

(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) DHCP host name setting

(118) Press the [PAUSE] key.

(117) Input the DHCP host name.

(118) Press the [PAUSE] key.

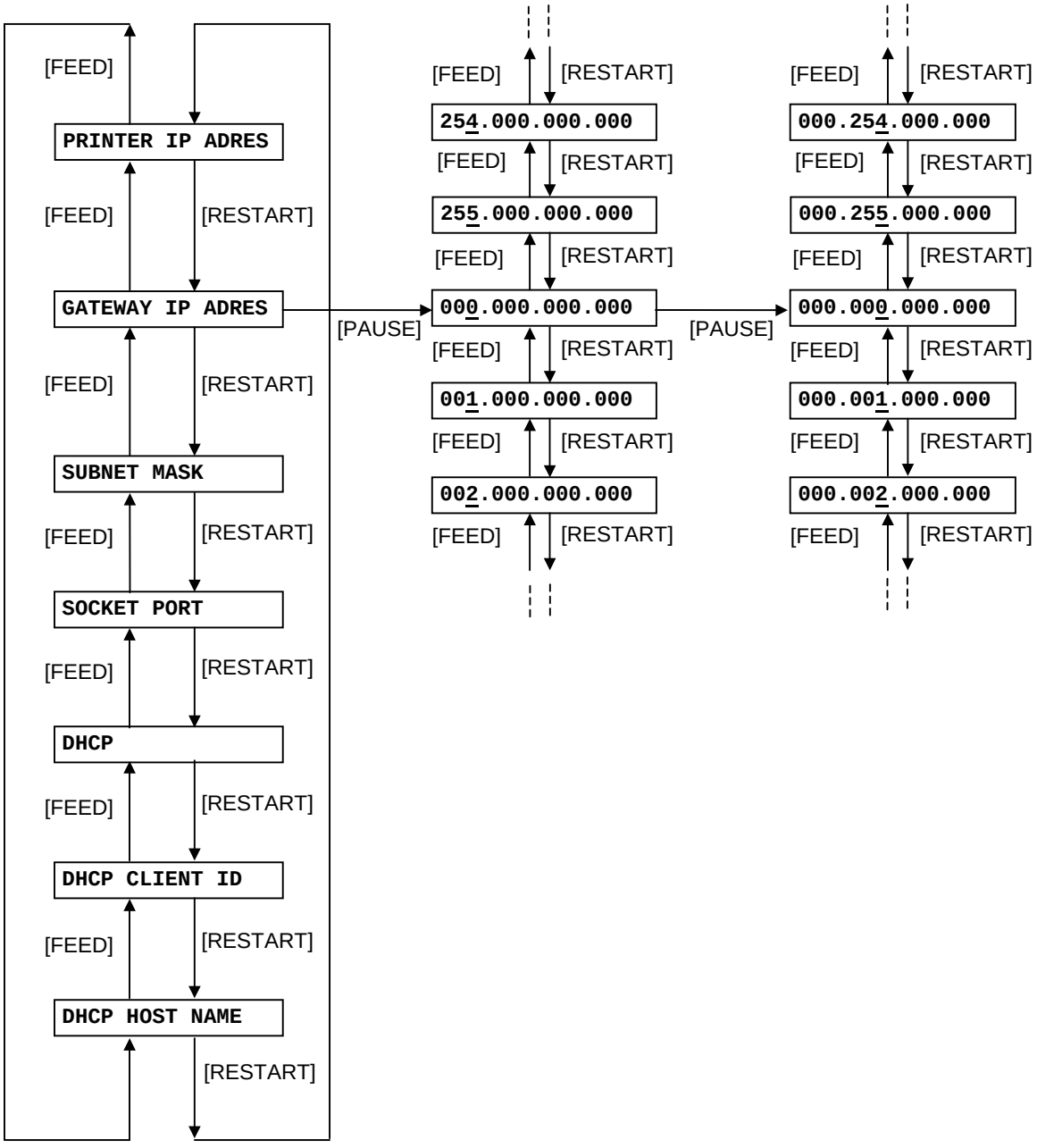
(119) DHCP HOST NAME input mode setting
(ASCII) *

(120) Press the [RESTART] key.

(121) End of IP address setting

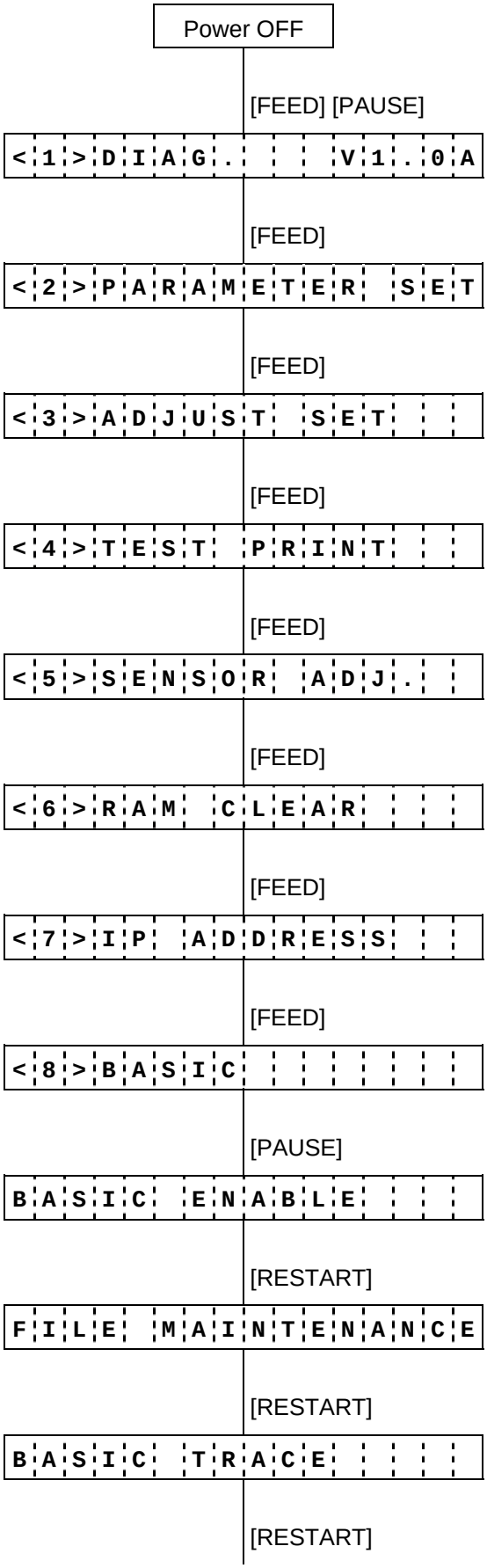
NOTE: *When the input mode for DHCP client ID and DHCP HOST NAME is ASCII, each byte of data is an ASCII character. A termination is FHH. It is "FF" in HEX mode and "■" before the space in ASCII mode.*

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

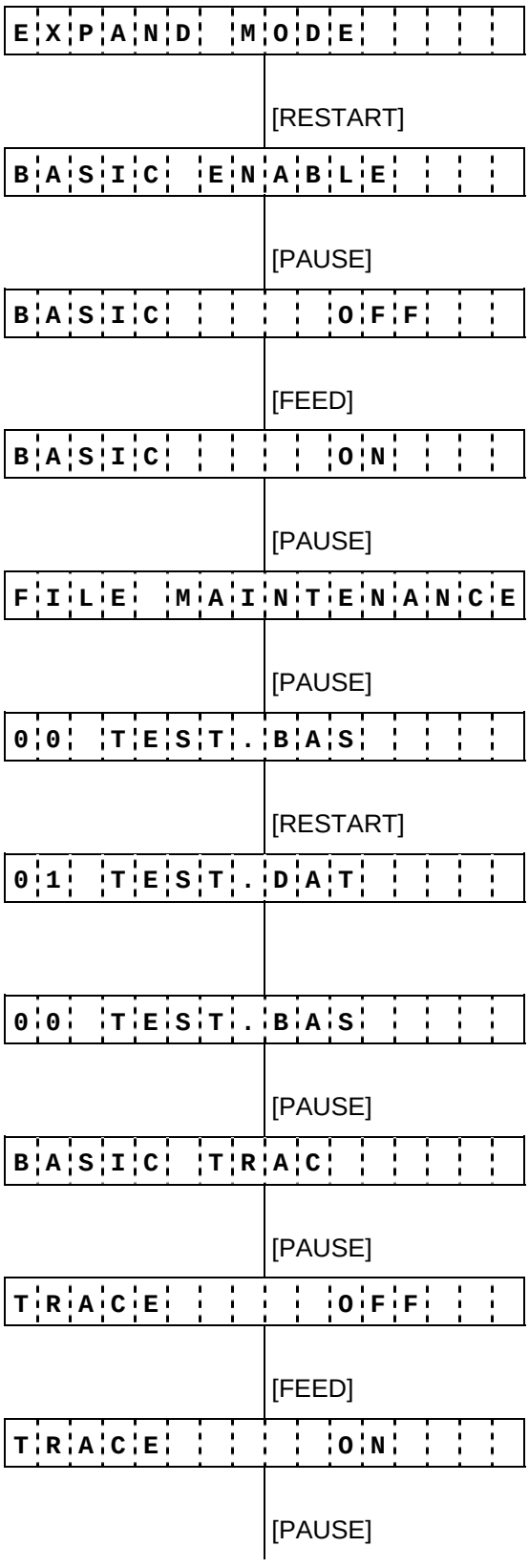
(20) Press the [RESTART] key.

(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

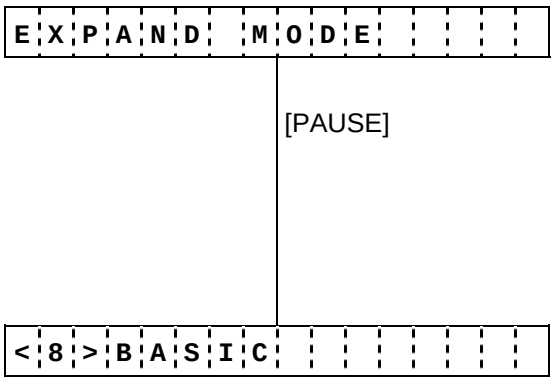
(42) Press the [PAUSE] key.

(43) BASIC trace setting (Disabled)

(44) Press the [FEED] key.

(45) BASIC trace setting (Enabled)

(46) Press the [PAUSE] key.

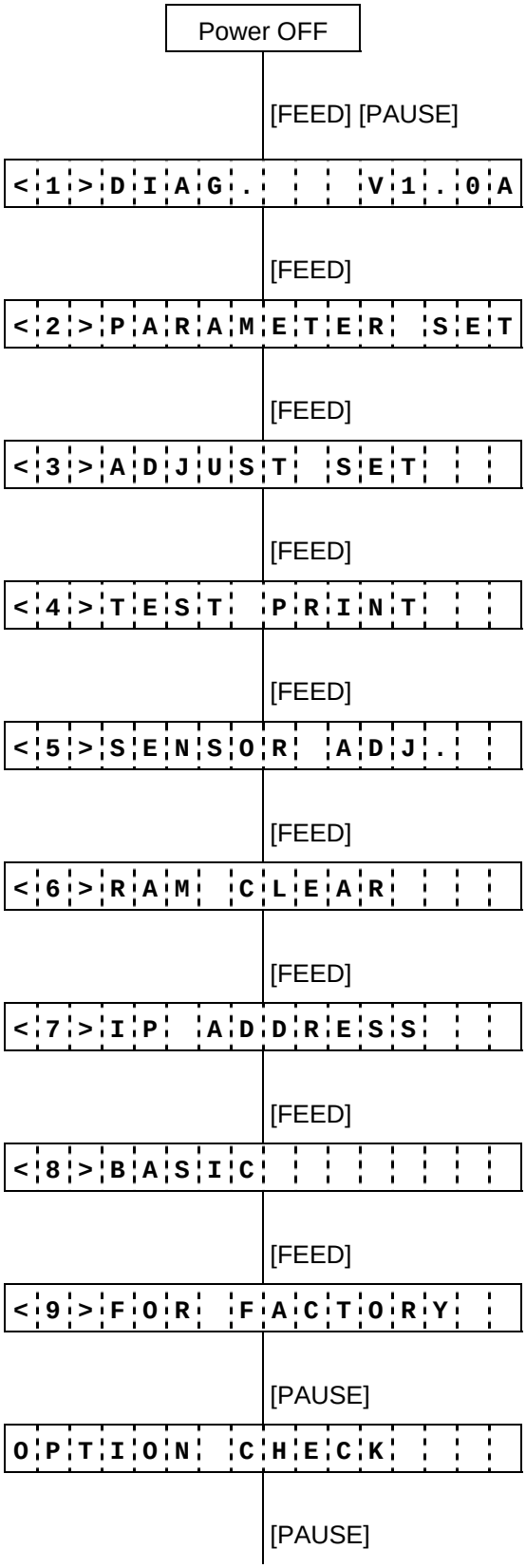


(47) BASIC expansion mode

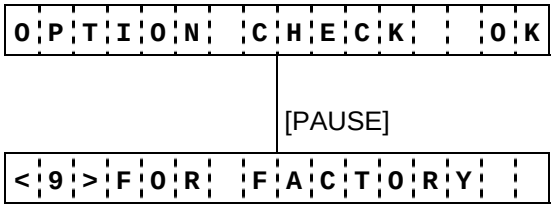
(48) Press the [PAUSE] key to execute the BASIC expansion mode program, if it has been loaded.
The basic expansion mode ends when the basic expansion program is exited.

(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

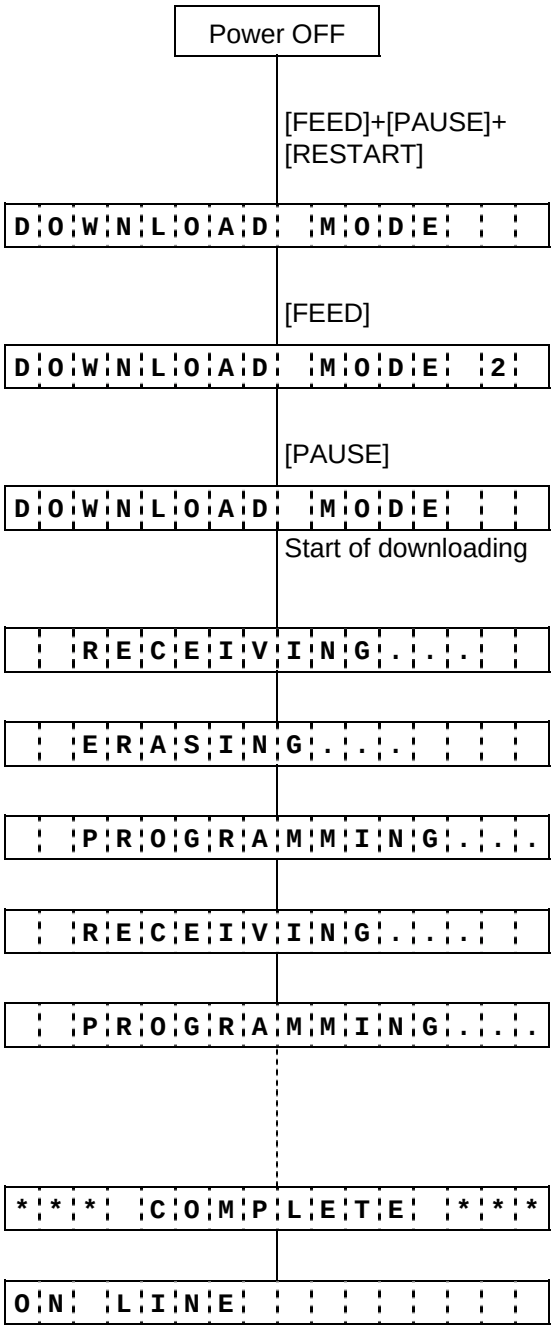
(23) Press the [PAUSE] key.

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

NOTE: *Option Check*

Currently no option checks are performed and fixed to OK.

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.

.
.
.

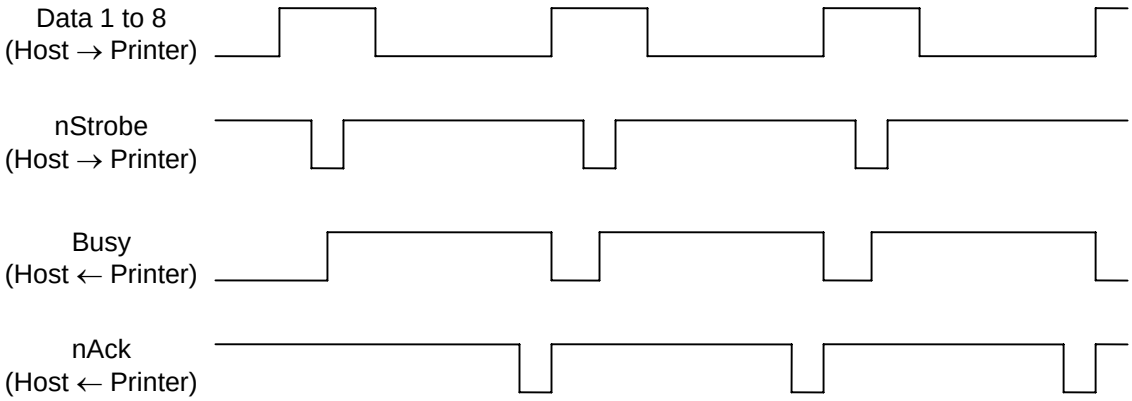
(14) Downloading is completed.

(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