

Meto SP 40 II

Label Printer

**Key Operation
Specification**



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1. SCOPE

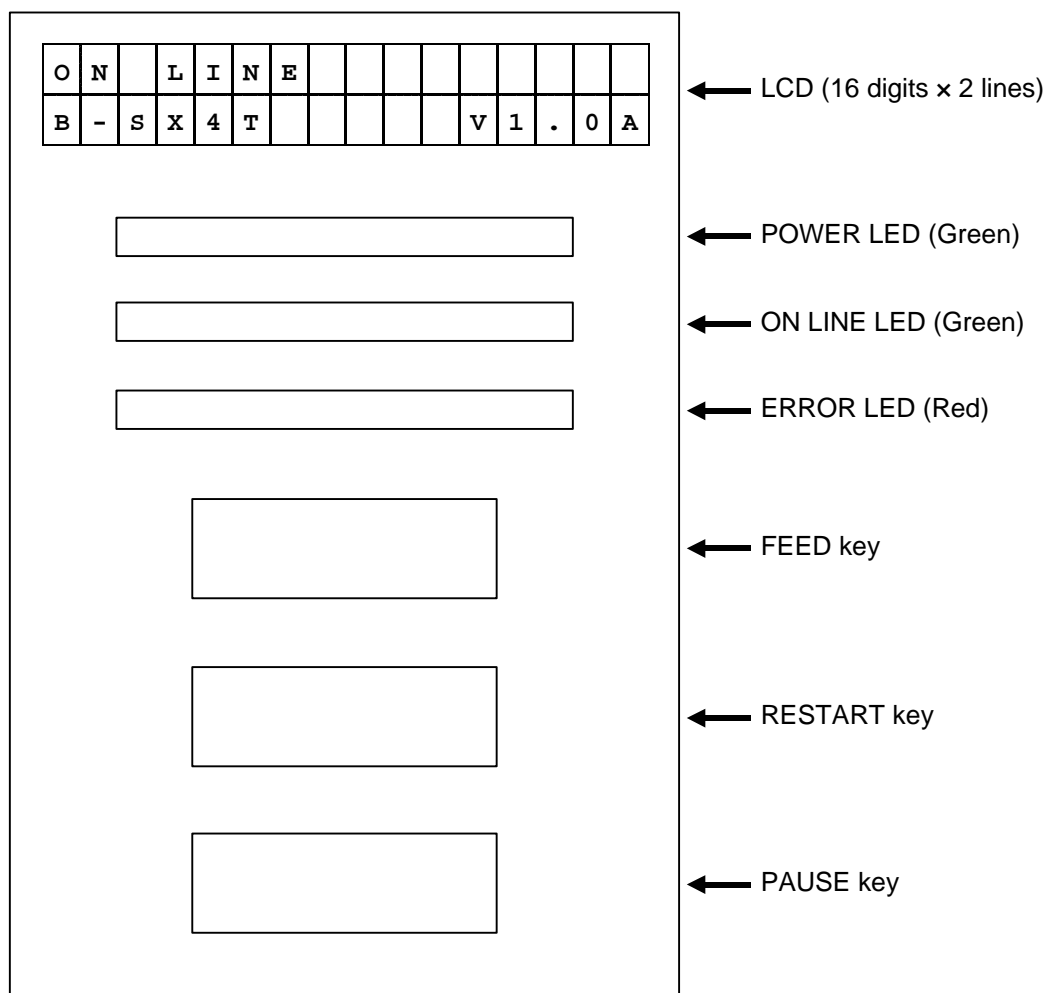
This specification applies to the key operations for the keys and the LCD panel of the SP 40 II industrial high-performance class general-purpose bar code printers.

2. OUTLINE

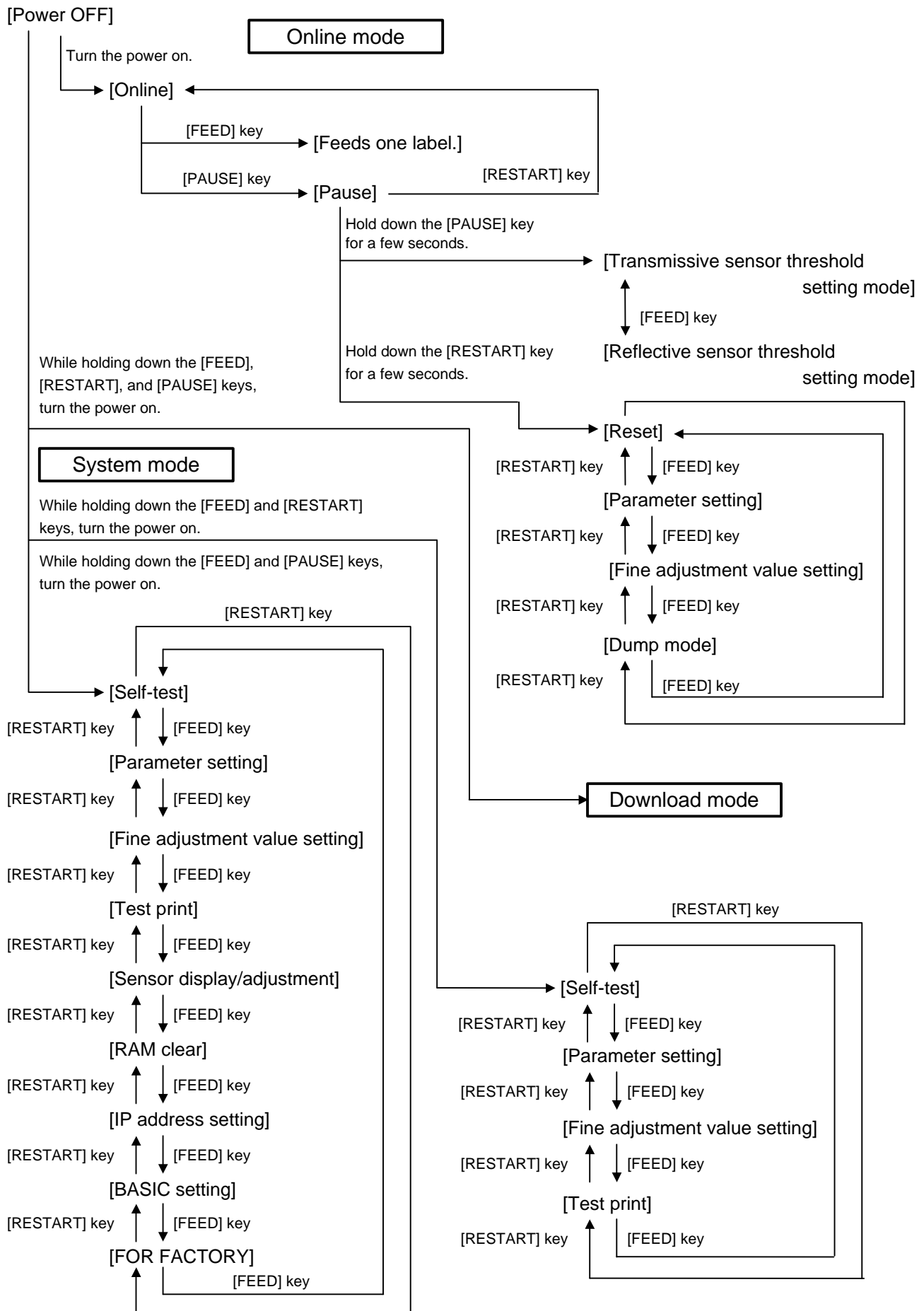
Keyboard operations are roughly classified into the online mode, in which a pause/restart is carried out and error messages are displayed when the printer is connected to the host such as a PC, and the system mode, in which the self-test and setting of various parameters are performed.

This specification describes the key operation procedures for the printer keys and the LCD panel. The names of the keys and LCD messages used in this specification are written in English.

3. OPERATION PANEL



4. GENERAL VIEW OF KEY OPERATION



5. ONLINE MODE

5.1 KEY FUNCTION

- [FEED] key:
- (1) Feeds one sheet of paper. This key can be used to eject one sheet of paper. This key can also be used to adjust the paper to the proper position when the paper is not properly positioned. If printing is attempted when the paper is not properly positioned, printing is not performed at the proper position. One or two sheets of paper should be fed to adjust the paper position before printing.
 - (2) Prints the data in the image buffer on one label according to the system mode setting.

NOTE: *A clear command or a command for drawing should not be sent during printing by the [FEED] key. If it is sent, the correct layout will be lost, and the label will not be printed properly. If an issue is performed by the [FEED] key while the data is being drawn in the image buffer, the correct layout may be lost.*

* For the following, refer to the parameter setting section.

- The procedure for using the label having a label pitch of less than 38 mm in the cut issue mode when the swing cutter is used
- The procedure for using the label having less than the min. label pitch for each issue speed in the cut issue mode when the rotary cutter is used.

- [RESTART] key:
- (1) Resumes printing after a temporary stop of label printing or after an error.
 - (2) Places the printer in the usual initial state which is obtained when the power is turned on.
 - (3) Programs various parameters.
- [PAUSE] key:
- (1) Stops label printing temporarily.
 - (2) Programs the threshold values.

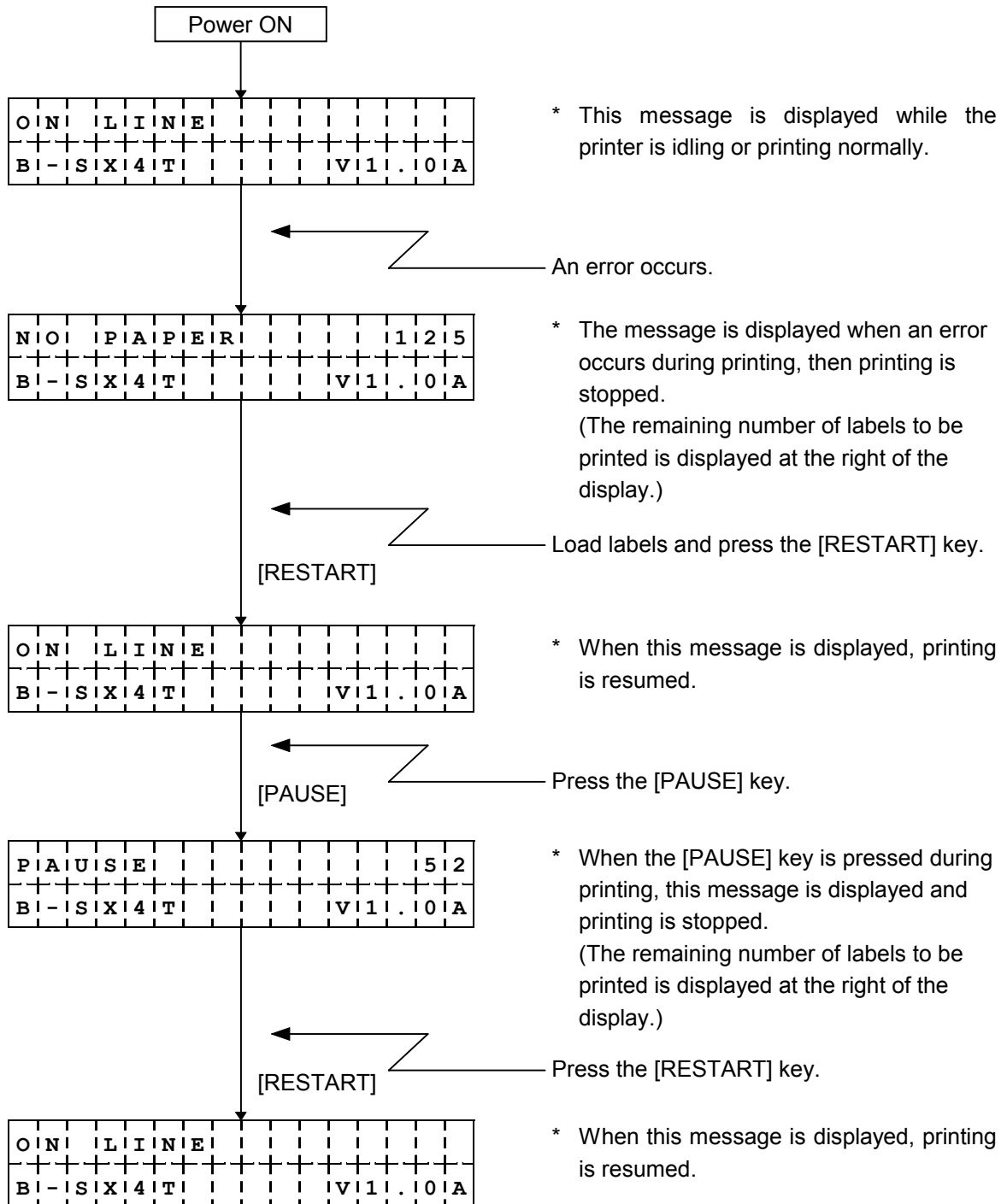
5.2 LED FUNCTION

- [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 FUNCTION

The LCD displays the message which indicates the printer status.
LCD Size: 16 digits × 2 lines

5.4 ONLINE MODE OPERATION EXAMPLE



NOTE: [Remaining number of labels to be printed] = [Designated number of labels] -
[Number of labels/tags normally printed before an error occurs or the printer stops temporarily]

5.5 THRESHOLD SETTING

5.5.1 Outline of Threshold Setting

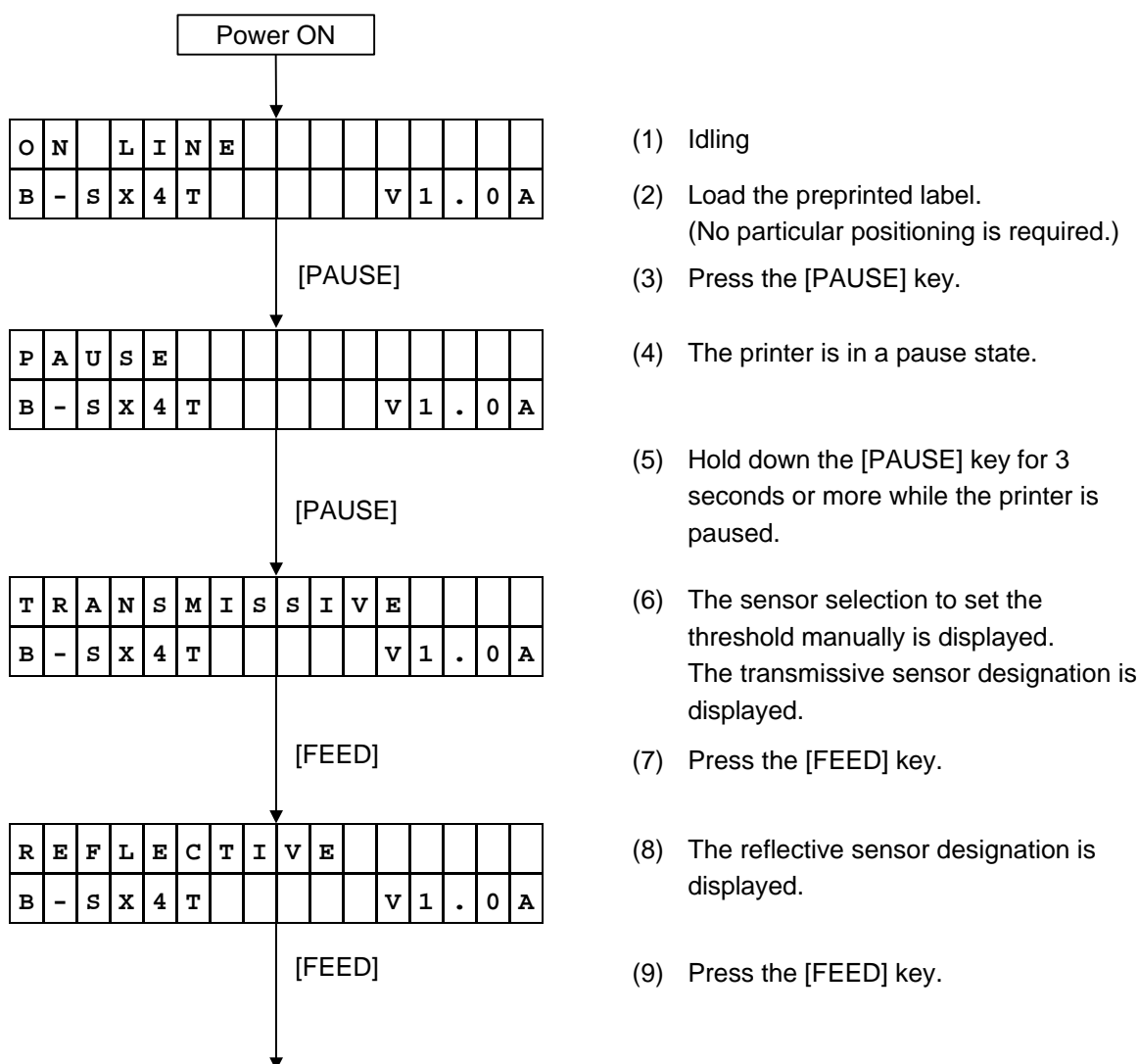
When a label is printed, the printer detects the gap between the labels using the transmissive sensor, and corrects the print position automatically to obtain a constant print position. However, when a preprinted label is used, some inks may prevent proper positioning correction. In this case, determine the transmissive sensor threshold manually by key operation and store the value in the non-volatile memory (EEPROM).

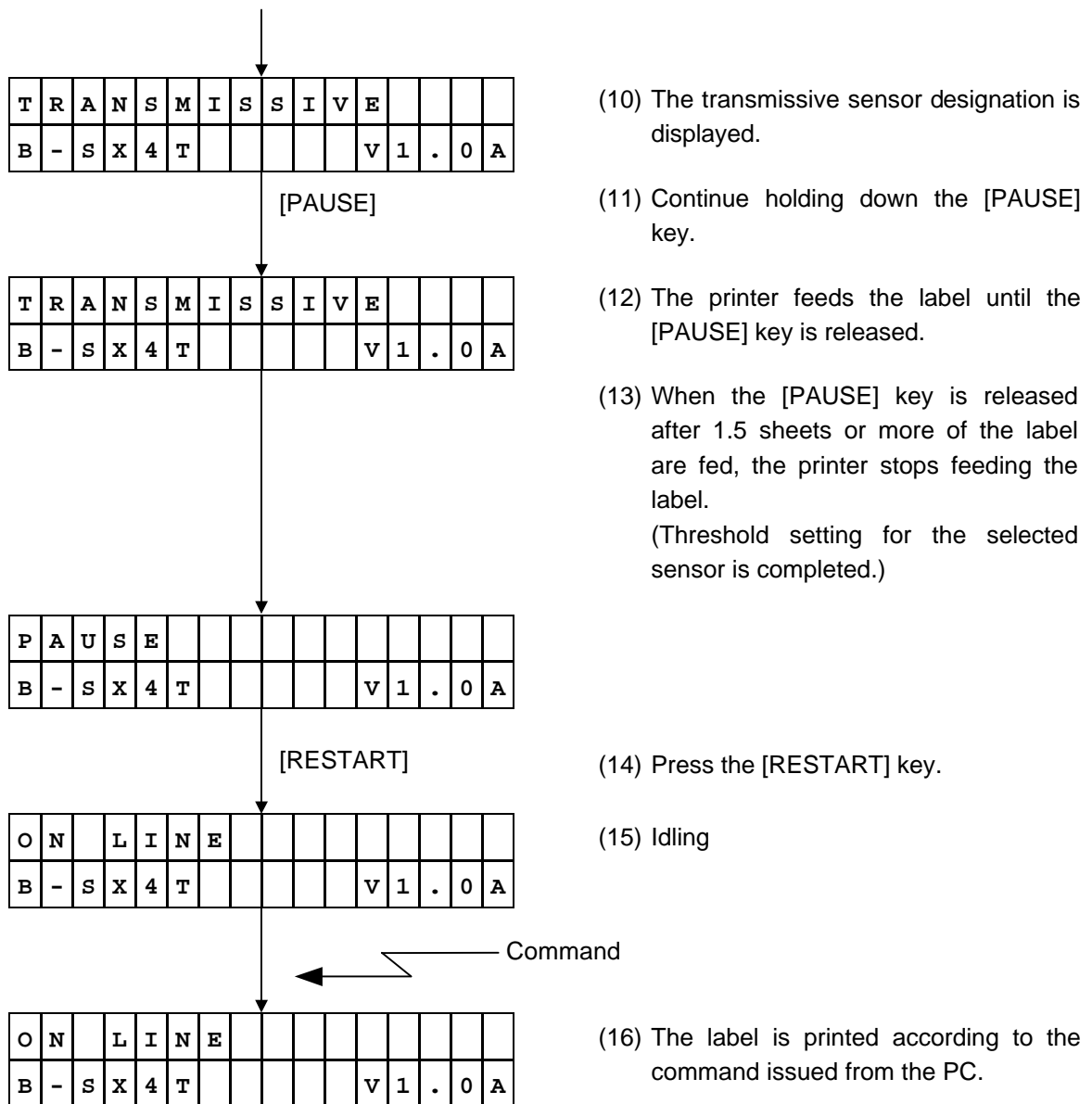
A constant print position can also be obtained when printing on a preprinted label since the print position is always corrected using the threshold stored in the non-volatile memory (EEPROM) by selecting "3: Transmissive Sensor (when using the preprinted label)" for the sensor type of the Issue Command.

When a label is printed by detecting the black mark on the back of the label, the reflective rate variation of a place other than the black mark may prevent the proper positioning correction. In this case, determine the reflective sensor threshold manually by key operation and store the value in the non-volatile memory (EEPROM).

A constant print position can also be obtained when printing on a tag since the print position is always corrected using the threshold stored in the non-volatile memory (EEPROM) by selecting "4: Reflective Sensor (when using a manual threshold value)" for the sensor type of the Issue Command.

5.5.2 Threshold Setting Operation Example





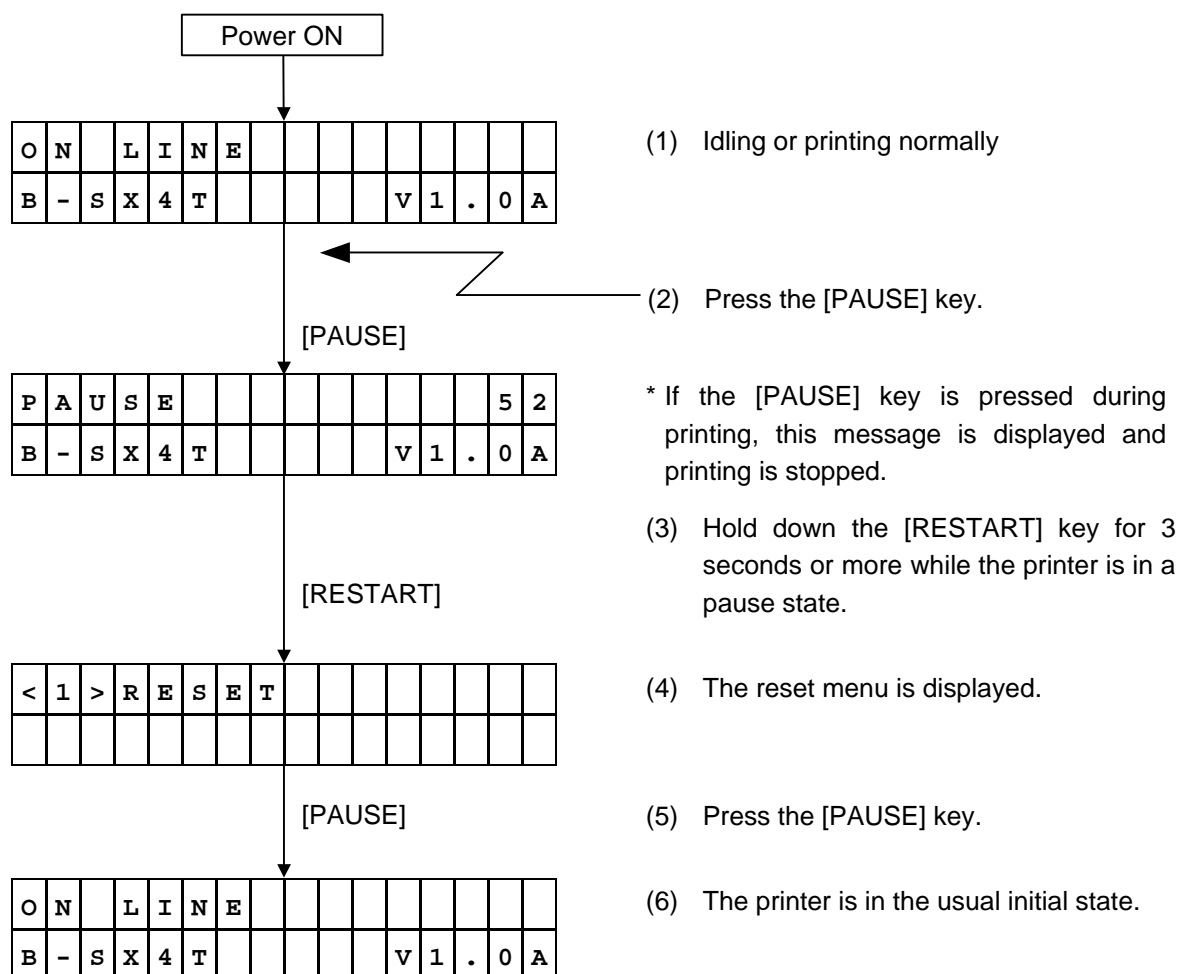
<Supplementary Explanation>

- (1) When the [PAUSE] key is released within 3 seconds while the printer is paused, the [PAUSE] key is invalid.
- (2) To program the threshold, 1.5 sheets or more of the label should be fed. (If the label is not fed by the above amount, the threshold may not be properly programmed. In this case, reprogramming is required.)
- (3) Even if the [PAUSE] key is held down for 3 seconds or more when the head is lifted, the [PAUSE] key is invalid.
- (4) While the printer is feeding a label to program the threshold, an error detection including the paper end or cutter error is not performed.
- (5) When the proper print position is not obtained after threshold programming, the sensor may be improperly adjusted. In this case, readjust the sensor in system mode, and program the threshold.

When the backing paper of the label is too thick, the transmissive sensor should be readjusted.

In addition, make sure that "3: Transmissive sensor (when using the preprinted label)" or "4: Reflective sensor (when using a manual threshold value)" is selected for sensor type of the Feed Command and the Issue Command.

5.6 RESET

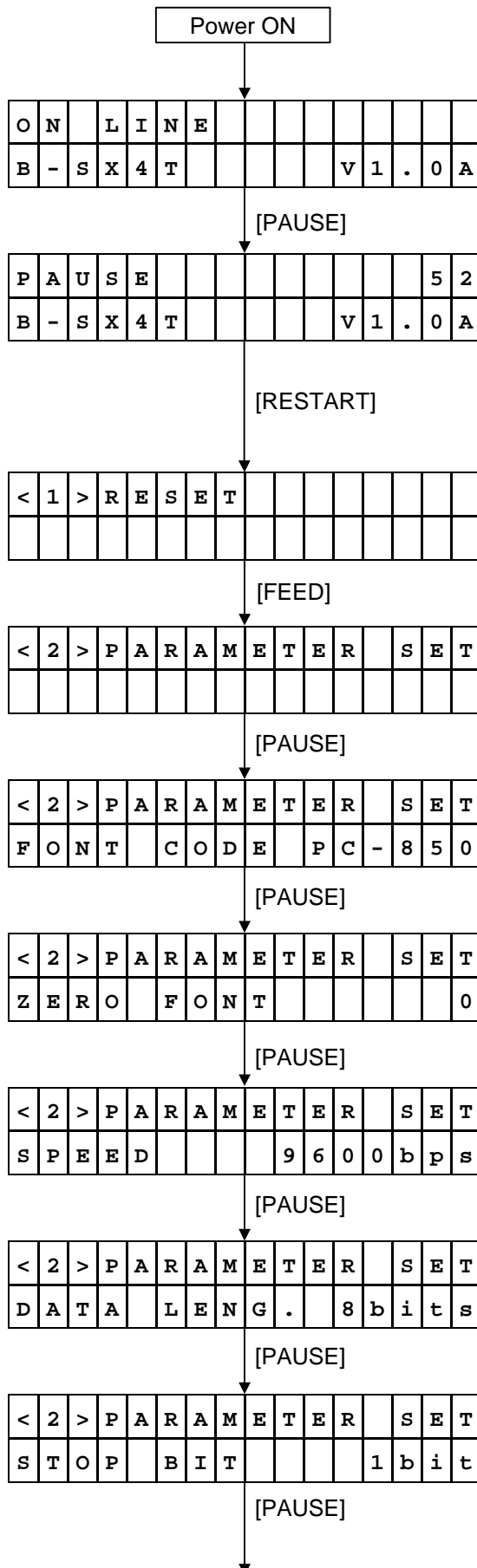


<Supplementary Explanation>

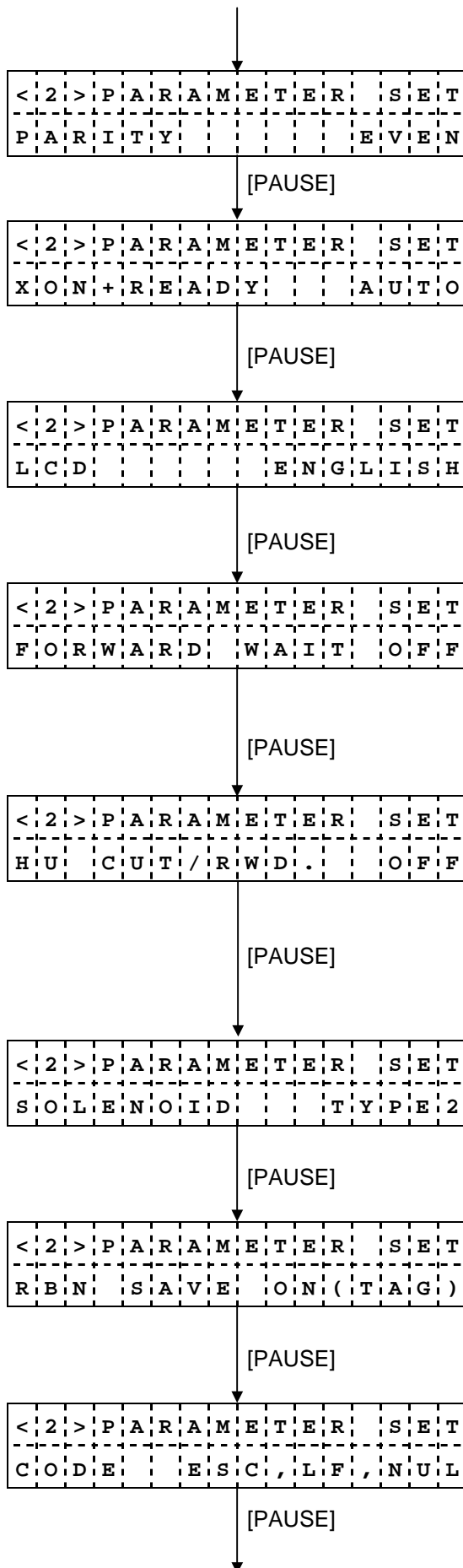
- (1) If the [RESTART] key is held down for 3 seconds or more when the printer is in an error state from which it can resume printing (the state of "Restoration by the [RESTART] key"), the reset menu is displayed.
- (2) If the [RESTART] key is released within 3 seconds when the [RESTART] key is held down during an error or a pause, the printer resumes printing a label. (The reset menu is not displayed.) However, if a communication error or command error has occurred, the printer enters the usual initial state when the [RESTART] key is pressed. (Even if the [RESTART] key is released within 3 seconds, the printer is reset.)

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 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 [PAUSE] key.
- (9) Character code selection: Select the character code using the [FEED] and [RESTART] keys.
- (10) Press the [PAUSE] key.
- (11) Font 0 selection: Select the font using the [FEED] and [RESTART] keys.
- (12) Press the [PAUSE] key.
- (13) Communication speed selection: Select the communication speed using the [FEED] and [RESTART] keys.
- (14) Press the [PAUSE] key.
- (15) Data length selection: Select the data length using the [FEED] and [RESTART] keys.
- (16) Press the [PAUSE] key.
- (17) Stop bit length selection: Select the stop bit length using the [FEED] and [RESTART] keys.
- (18) Press the [PAUSE] key.



(19) Parity selection:
Select the parity using the [FEED] and [RESTART] keys.

(20) Press the [PAUSE] key.

(21) Transmission control method selection:
Select the transmission control method using the [FEED] and [RESTART] keys.

(22) Press the [PAUSE] key.

(23) Language selection for LCD messages:
Select the language for LCD messages using the [FEED] and [RESTART] keys.

(24) Press the [PAUSE] key.

(25) Setting for forward feed standby in cut issue mode:
Make the forward feed standby setting using the [FEED] and [RESTART] keys.

(26) Press the [PAUSE] key.

(27) Setting for head-up operation in cut issue mode, or for using the rewinder in batch issue mode:
Make the head-up operation setting/the rewinder use setting using the [FEED] and [RESTART] keys.

(28) Press the [PAUSE] key.

(29) Installed solenoid type setting: Set which type of solenoid is installed, TYPE 1 or TYPE 2 with the [FEED] and [RESTART] keys.

(30) Press the [PAUSE] key.

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

(32) Press the [PAUSE] key.

(33) Control code selection:
Select the control code using the [FEED] and [RESTART] keys.

(34) Press the [PAUSE] key.

<	2	>	P	A	R	A	M	E	T	E	R	S	E	T
P	E	E	L		O	F	F	S	T	S		O	F	F

[PAUSE]

<	2	>	P	A	R	A	M	E	T	E	R	S	E	T	
F	E	E	D		K	E	Y					F	E	E	D

[PAUSE]

<	2	>	P	A	R	A	M	E	T	E	R	S	E	T	
K	A	N	J	I		C	O	D	E		T	Y	P	E	1

[PAUSE]

<	2	>	P	A	R	A	M	E	T	E	R	S	E	T
E	U	R	O		C	O	D	E				B	0	

[PAUSE]

<	2	>	P	A	R	A	M	E	T	E	R	S	E	T
A	U	T	O		H	D		C	H	K		O	F	F

[PAUSE]

<	2	>	P	A	R	A	M	E	T	E	R	S	E	T	
A	C	K	/	B	U	S	Y				T	Y	P	E	1

[PAUSE]

<	2	>	P	A	R	A	M	E	T	E	R	S	E	T
W	E	B		P	R	I	N	T	E	R		O	F	F

[PAUSE]

<	2	>	P	A	R	A	M	E	T	E	R	S	E	T
I	N	P	U	T		P	R	I	M	E		O	N	

[PAUSE]

<	2	>	P	A	R	A	M	E	T	E	R	S	E	T	
R	B	N		N	E	A	R		E	N	D		7	0	m

[PAUSE]

(35) Peel-off wait status selection:
Set the peel-off wait status selection using the [FEED] and [RESTART] keys.

(36) Press the [PAUSE] key.

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

(38) Press the [PAUSE] key.

(39) Kanji code selection:
Select the Kanji code using the [FEED] and [RESTART] keys.

(40) Press the [PAUSE] key.

(41) Euro code setting:
Set the Euro code using the [FEED] and [RESTART] keys.

(42) Press the [PAUSE] key.

(43) Automatic head broken dots check setting:
Set the automatic head broken dots check using the [FEED] and [RESTART] keys.

(44) Press the [PAUSE] key.

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

(46) Press the [PAUSE] key.

(47) Web printer function setting:
Set the function for a web printer using the [FEED] and [RESTART] keys.

(48) Press the [PAUSE] key.

(49) Reset process when the nlnit signal is ON:
Set the reset process using the [FEED] and [RESTART] keys.

(50) Press the [PAUSE] key.

(51) Ribbon near end detection setting:
Select the remaining ribbon length to be detected as a ribbon near end state using the [FEED] and [RESTART] keys.

(52) Press the [PAUSE] key.

<	2	>	P	A	R	A	M	E	T	E	R	S	E	T		
E	X	.	I	/	O	T	Y	P	E	1

[PAUSE]

<	2	>	P	A	R	A	M	E	T	E	R	S	E	T
C	E	N	T	R	O	.	M	O	D	E	.	S	P	P

[PAUSE]

<	2	>	P	A	R	A	M	E	T	E	R	S	E	T
P	L	U	G	.	&	.	P	L	A	Y	.	O	F	F

[PAUSE]

<	2	>	P	A	R	A	M	E	T	E	R	S	E	T	
L	B	L	/	R	B	N	.	E	N	D	.	T	Y	P	1

[PAUSE]

<	2	>	P	A	R	A	M	E	T	E	R	S	E	T	
P	R	E	.	P	E	E	L	.	O	F	F	.	O	F	F

[PAUSE]

<	2	>	P	A	R	A	M	E	T	E	R	S	E	T
B	A	C	K	.	S	P	E	E	D	.	S	T	D	

[PAUSE]

<	2	>	P	A	R	A	M	E	T	E	R	S	E	T
.	

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

(54) Press the [PAUSE] key.

(55) Centronics operation mode setting:
Select the Centronics operation mode using the [FEED] and [RESTART] keys.

(56) Press the [PAUSE] key.

(57) Plug-and-play operation setting:
Set the plug-and-play operation using the [FEED] and [RESTART] keys.

(58) Press the [PAUSE] key.

(59) Label end/ribbon end process setting:
Select the label/ribbon end process using the [FEED] and [RESTART] keys.

(60) Press the [PAUSE] key.

(61) Pre-peel-off process setting:
Set the pre-peel-off process using the [FEED] and [RESTART] keys.

(62) Press the [PAUSE] key.

(63) Back feed speed setting:
Select the back feed speed using the [FEED] and [RESTART] keys.

(64) Press the [PAUSE] key.

(65) The parameter setting menu is displayed.

5.7.2 Setting Contents

For details, refer to section 6.3 “Various Parameters Setting” in chapter 6 “System Mode”.

- (1) Character code selection (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
- (2) Font 0 selection (ZERO FONT)
 - 0 (No slash used)
 - 0 (Slash used)
- (3) RS-232C communication speed selection (SPEED)
 - 2400 bps
 - 4800 bps
 - 9600 bps
 - 19200 bps
 - 38400 bps
 - 115200 bps
- (4) RS-232C data length selection (DATA LENG.)
 - 7 bits
 - 8 bits
- (5) RS-232C stop bit length selection (STOP BIT)
 - 1 bit
 - 2 bits
- (6) RS-232C parity selection (PARITY)
 - NONE
 - EVEN
 - ODD

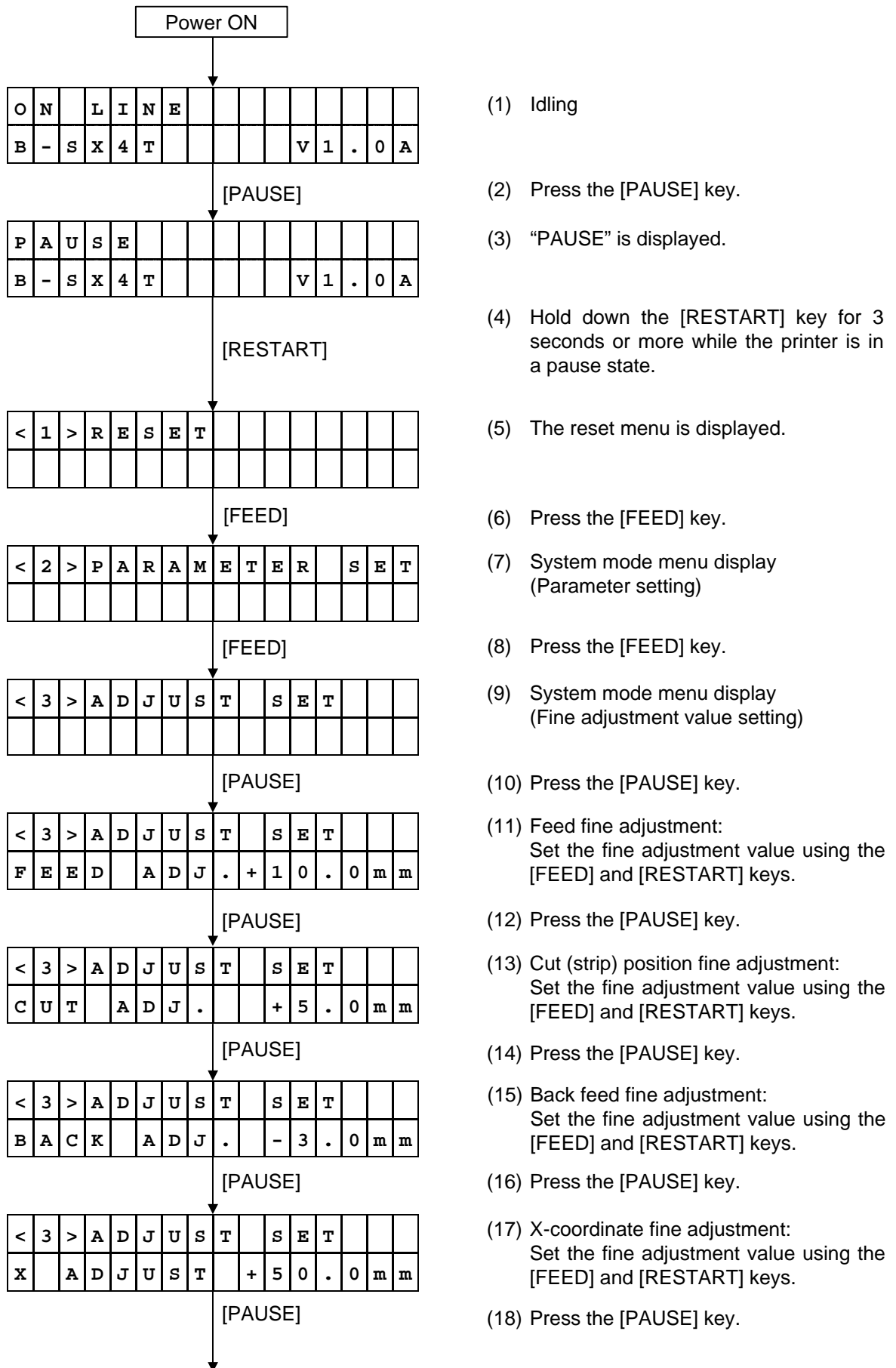
- (7) RS-232C transmission control method selection (XON+READY)
- XON/XOFF protocol (An XON is not output when the power is on and an XOFF is not output when the power is off)
 - READY/BUSY (DTR) protocol (An XON is not output when the power is on and an XOFF is not output when the power is off)
 - XON/XOFF + 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) Language selection for LCD messages (LCD)
- ENGLISH
 - GERMAN
 - FRENCH
 - DUTCH
 - SPANISH
 - JAPANESE
 - ITALIAN
- NOTE:** When Japanese is selected, one part of the character codes is different. For details, refer to the External Equipment Interface Specification (TAA-1380).
- (9) Setting for forward feed standby (FORWARD WAIT)
- ON (with automatic feed standby)
 - POSITION (Fine adjustment value setting for the stop position after a forward feed)
 - OFF (without automatic feed standby)
- NOTE:** When it is set to ON, if the printer is in the idle state for 1 second or more after a label is issued, the printer automatically performs an approximately 13.7-mm forward feed, then stops.
- (10) Setting for head-up operation in cut issue mode, or for using the rewinder in batch issue mode (HU CUT/RWD.)
- ON (The head is lifted, or the rewinder is used.)
 - OFF (The head is not lifted, or the rewinder is not used.)
- (11) Installed solenoid type setting
- TYPE 1
 - TYPE 2 (Stronger pull force type)
- (12) Ribbon saving system setting (RBN SAVE)
- ON (TAG) (The ribbon saving system is used.: When the head lever position is "TAG".)
 - ON (LBL) (The ribbon saving system is used.: When the head lever position is "LABEL".)
 - OFF (The ribbon saving system is not used.)

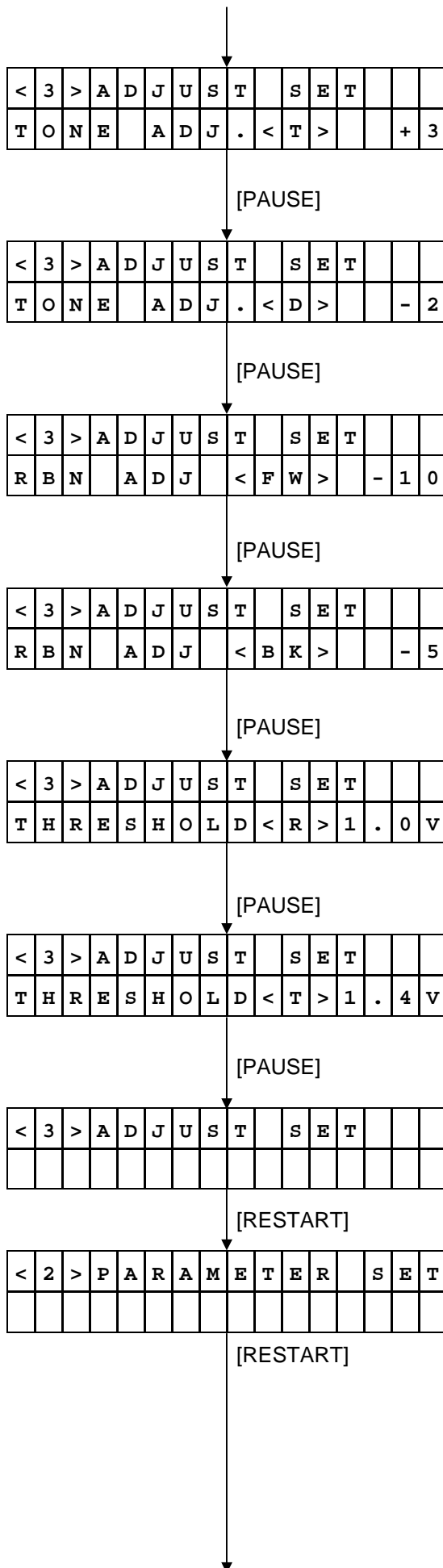
- (13) Control code selection (CODE)
 - Automatic selection (ESC, LF, NUL/{, |, })
 - Manual selection (ESC, LF, NUL method)
 - Manual selection ({, |, } method)
 - Any set code
- (14) Peel-off wait status selection (PEEL OFF STS)
 - OFF (No peel-off wait status selection)
 - ON (Peel-off wait status selection)
- (15) [FEED] key function setting (FEED KEY)
 - FEED: One label is fed.
 - PRINT: Data in the image buffer is printed on one label.
- (16) Kanji code selection (KANJI CODE)
 - TYPE1
 - TYPE2
- (17) Euro code setting (EURO CODE)
20H to FFH
- (18) Automatic head broken dots check setting (AUTO HD CHK)
 - ON: Head broken dots check is automatically performed when the power is turned on.
 - OFF: Head broken dots check is not automatically performed if the power is turned on.
- (19) Centronics ACK/BUSY timing setting (ACK/BUSY)
 - TYPE1 The ACK signal is sent to match the rising edge of ACK signal and the falling edge of the BUSY signal.
 - TYPE2 The ACK signal is sent to match the falling edge of ACK signal and the falling edge of the BUSY signal.
- (20) Web printer function setting (WEB PRINTER)
 - ON: Web printer function is enabled.
 - OFF: Web printer function is disabled.
- (21) Reset process when the nInit signal is ON (INPUT PRIME)
 - ON: Reset process is performed.
 - OFF: Reset process is not performed.
- (22) Ribbon near end detection setting (RBN NEAR END)
 - OFF: The ribbon near end state is not detected.
 - 30 m: The ribbon near end state is when the remaining ribbon length is 30 m.
 - 70 m: The ribbon near end state is when the remaining ribbon length is 70 m.
- (23) Expansion I/O operation mode setting (EX. I/O)
 - TYPE1: Standard mode
 - TYPE2: In-line mode
- (24) Centronics operation mode setting (CENTRO. MODE)
 - SPP: Compatibility mode
 - ECP: ECP mode

- (25) Plug-and-play operation setting (PLUG & PLAY)
- ON: Plug-and-play operation is enabled.
 - OFF: Plug-and-play operation is disabled.
- (26) Label end/ribbon end process setting (LBL/RBN END)
- TYPE1: When a label end or ribbon end state is detected, the printer stops even if it is printing a label.
 - TYPE2: When a label end or ribbon end state is detected, the printer prints the current label as far as possible, then stops.
- (27) Pre-peel-off process setting (PRE PEEL OFF)
- OFF: Pre-peel-off operation is not performed.
 - ON: Pre-peel-off operation is performed.
- (28) Back feed speed setting (BACK SPEED)
- STD: 3 ips
 - LOW: 2 ips

5.8 FINE ADJUSTMENT VALUE SETTING

5.8.1 Fine Adjustment Value Setting Operation Example





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

(20) Press the [PAUSE] key.

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

(22) Press the [PAUSE] key.

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

(24) Press the [PAUSE] key.

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

(26) Press the [PAUSE] key.

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

(28) Press the [PAUSE] key.

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

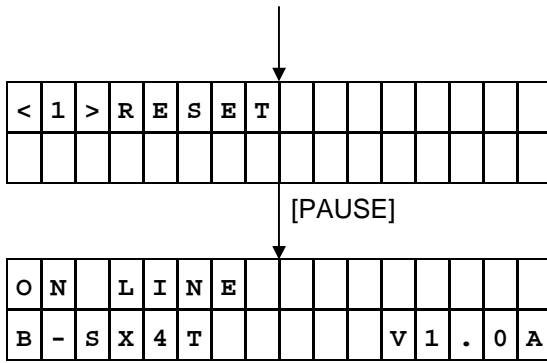
(30) Press the [PAUSE] key.

(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 display is returned to the state obtained when the power is turned on.

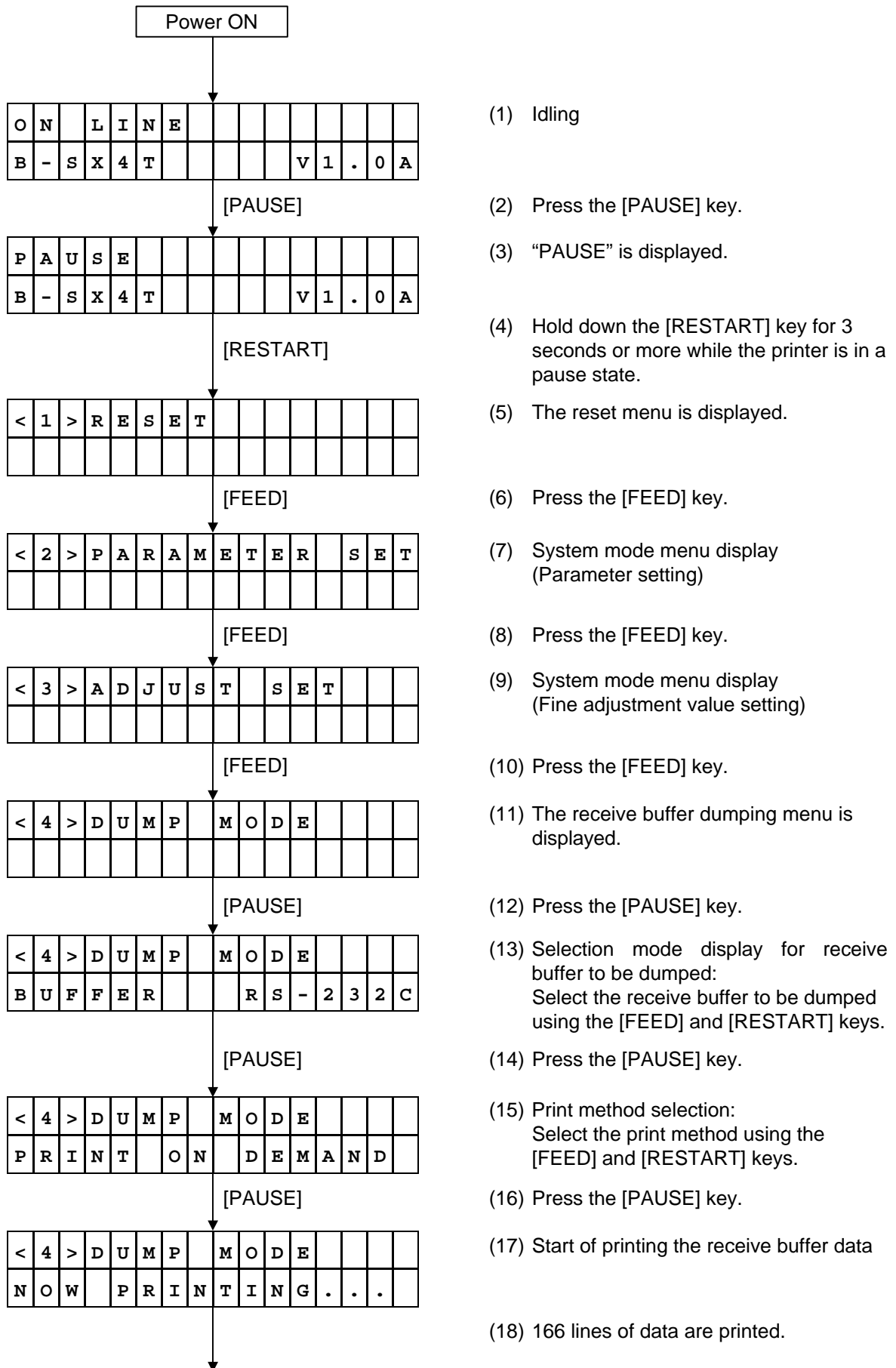
5.8.2 Setting Contents

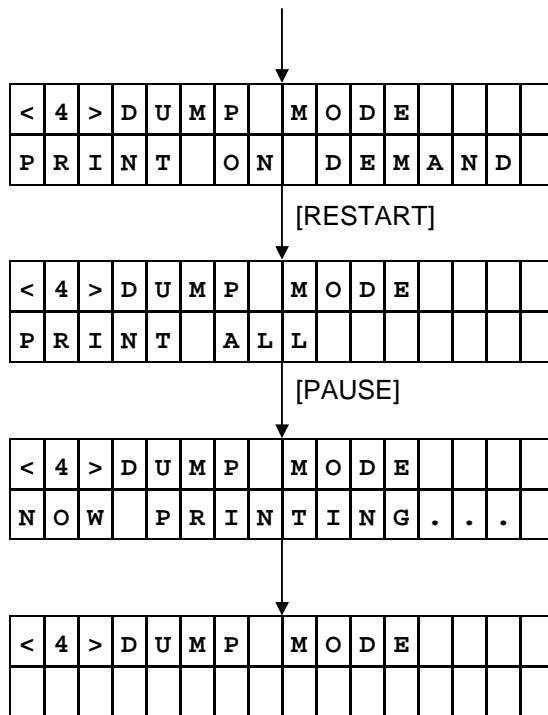
For details, refer to section 6.4 “Various Fine Adjustment Values Setting” in chapter 6 “System

- (1) Feed fine adjustment (FEED ADJ.)
-50.0 mm to +50.0 mm (in 0.5 mm units)
- (2) Cut (strip) position fine adjustment (CUT ADJ.)
-50.0 mm to +50.0 mm (in 0.5 mm units)
- (3) Back feed fine adjustment (BACK ADJ.)
-9.5 mm to +9.5 mm (in 0.5 mm units)
- (4) X-coordinate fine adjustment (X ADJUST)
-99.5 mm to +99.5 mm (in 0.5 mm units)
- (5) Print density fine adjustment (Thermal transfer print mode) (TONE ADJ.<T>)
-10 step to +10 step (in units of step)
- (6) Print density fine adjustment (Direct thermal print mode) (TONE ADJ.<D>)
-10 step to +10 step (in units of step)
- (7) Ribbon motor drive voltage fine adjustment (Rewind) (RBN ADJ <FW>)
-15 step to +0 step (in units of step)
- (8) Ribbon motor drive voltage fine adjustment (Back tension) (RBN ADJ <BK>)
-15 step to +0 step (in units of step)
- (9) Reflective sensor manual threshold fine adjustment (THRESHOLD <R>)
0.0 V to 4.0 V
- (10) Transmissive sensor manual threshold fine adjustment (THRESHOLD <T>)
0.0 V to 4.0 V

5.9 DUMPING OF RECEIVE BUFFER

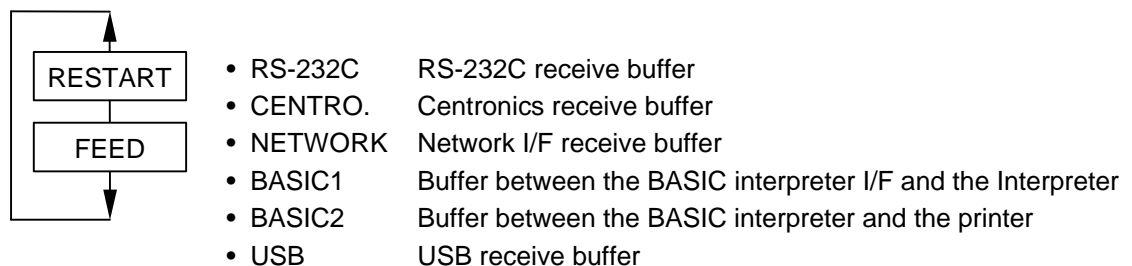
5.9.1 Operation Example of Receive Buffer Dumping



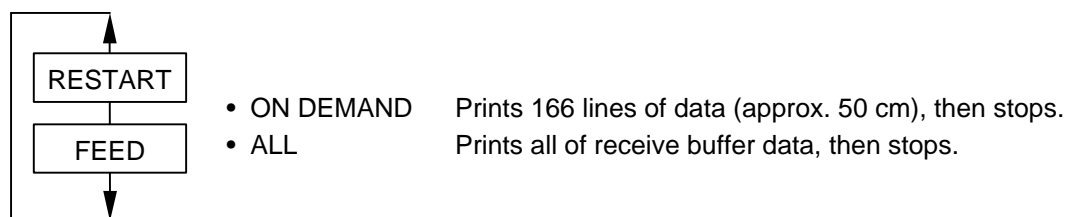


- (19) Print method selection:
Select the print method using the [FEED] and [RESTART] keys.
- (20) Press the [RESTART] key.
- (21) Print method selection:
Select the print method using the [FEED] and [RESTART] keys.
- (22) Press the [PAUSE] key.
- (23) Start of printing the remaining receive buffer data
- (24) All of the remaining data is printed.
- (25) After printing is completed, the display is returned to the receive buffer dumping menu.

Selection of receive buffer (BUFFER)



Selection of print method (PRINT)



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

```

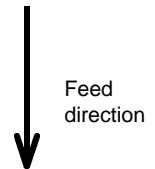
00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 .....
00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 .....
00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 .....
00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 .....
7B 41 58 3B 2B 30 30 30 2C 2B 30 30 30 2C 2B 30 {AX;+000,+000,+0
30 7C 7D 7B 44 30 37 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|}.....

```



Print conditions:

- Print width: Approximately 100 mm
- Sensor designation: None
- Print speed: 6 ips
- The print mode (thermal transfer/direct thermal) depends on the current setting.
- Data of 16 bytes is printed on one line.
- Data is printed, starting from the new data to the old data.
- Data pointed by the 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:	4 KB (Max. 256 lines)
BASIC2:	4 KB (Max. 256 lines)
USB:	1 MB (Max. 65536 lines)

NOTES:

1. *To print all of the receive buffer data, the label with the length below is required.*

RS-232C:	198.2 m
Centronics:	198.2 m
Network I/F:	198.2 m
BASIC1:	1 m
BASIC2:	1 m
USB:	198.2 m

2. *If an error occurs when printing the receive buffer dump, the printer displays an error message, and stops. The error is cleared by pressing the [PAUSE] key, and then 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 LCD MESSAGES AND LED INDICATIONS

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

No.	LCD Messages of Upper line (English)	LED Indication			Printer Status	Restoration by the [RESTART] key Yes/No	Acceptance of Status Request Reset Command Yes/No
		POWER	ON LINE	ERROR			
1	ON LINE	○	○	●	In the online mode	-	Yes
	ON LINE	○	◐	●	In the online mode (Communicating)	-	Yes
2	HEAD OPEN	○	●	●	The head was opened in the online mode.	-	Yes
3	PAUSE ****	○	●	●	In a pause state	Yes	Yes
4	COMMS ERROR	○	●	○	A parity error or framing error has occurred during communication by RS-232C.	Yes	Yes
5	PAPER JAM ****	○	●	○	A paper jam occurred during paper feed.	Yes	Yes
6	CUTTER ERROR****	○	●	○	An abnormal condition occurred at the cutter.	Yes	Yes
7	NO PAPER ****	○	●	○	The label has run out.	Yes	Yes
8	NO RIBBON ****	○	●	○	The ribbon has run out.	Yes	Yes
9	HEAD OPEN ****	○	●	○	A feed or an issue was attempted with the head opened. (except the [FEED] key)	Yes	Yes
10	HEAD ERROR	○	●	○	A broken dot error has occurred in the thermal head.	Yes	Yes
11	EXCESS HEAD TEMP	○	●	○	The thermal head temperature has become excessively high.	No	Yes
12	RIBBON ERROR****	○	●	○	An abnormal condition occurred in the sensor for determining the torque for the ribbon motor.	Yes	Yes
13	REWIND FULL ****	○	●	○	An overflow error has occurred in the rewinder.	Yes	Yes
14	SAVING ### &&&& SAVING %%%%%%%%%	○	○	●	In writable character or PC command save mode	-	Yes
15	FLASH WRITE ERR.	○	●	○	An error has occurred in writing data into memory for storage (flash memory card, the ATA card, or flash ROM on the CPU board).	No	Yes
16	FORMAT ERROR	○	●	○	An erase error has occurred in formatting memory for storage (flash memory card, the ATA card, or flash ROM on the CPU board).	No	Yes

No.	LCD Messages of Upper line (English)	LED Indication			Printer Status	Restoration by the [RESTART] key Yes/No	Acceptance of Status Request Reset Command Yes/No
		POWER	ON LINE	ERROR			
17	FLASH CARD FULL	○	●	○	Saving failed because of the insufficient capacity of memory for storage (flash memory card, the ATA card, or flash ROM on the CPU board).	No	Yes
18	Display of error command (See NOTE 1.)	○	●	○	A command error has occurred in analyzing the command.	Yes	Yes
19	POWER FAILURE	○	●	○	A momentary power interruption has occurred.	No	No
20	INITIALIZING...	○	●	●	The memory card is being initialized. (Initialization is carried out for a max. of approximately 15 seconds)	—	—
21	EEPROM ERROR	○	●	○	An EEPROM for back-up cannot be read/written properly.	No	No
22	SYSTEM ERROR	○	●	○	When any abnormal operations as below are performed, a system error occurs. (a) Command fetch from an odd address (b) Access to the word data from a place other than the boundary of the word data (c) Access to the long word data from a place other than the boundary of the long word data (d) Access to the area of 80000000H to FFFFFFFFH in the logic space in the user mode. (e) Undefined command placed in other than the delay slot has been decoded. (f) Undefined command in the delay slot has been decoded. (g) Command to rewrite the delay slot has been decoded.	No	No
23	100BASE LAN INITIALIZING... (This is spread over the upper and lower lines)	○	●	●	The 100BASE LAN is being initialized. * When the B-9700-LAN-QM (built-in 10/100BASE Ethernet interface board) has been installed.	—	—

No.	LCD Messages of Upper line (English)	LED Indication			Printer Status	Restoration by the [RESTART] key Yes/No	Acceptance of Status Request Reset Command Yes/No
		POWER	ON LINE	ERROR			
24	DHCP CLIENT INITIALIZING... (This is spread over the upper and lower lines)	○	●	●	The DHCP client is being initialized. * When the DHCP function is enabled.	—	—

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

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

└─ Command error

LCD display

PC001;0A00,0300,
B-SX4T V1.0A

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

└─ Command error

LCD display

T20G30
B-SX4T V1.0A

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

└─ Command error

LCD display

XR;0200,0300,045
B-SX4T V1.0A

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

NOTE 3: ○: ON
 ⊙: Blinking
 ●: OFF
 ****: Remaining number of labels to be printed □□□□ to 9999 (in units of 1 label/tag)

%%%%%%%%: Remaining memory capacity for ATA card 0 to 9999999 (in units of 1 K byte)

###: Remaining memory capacity of PC save area of the flash memory card:
 0 to 895 (in K bytes)

&&&&: Remaining memory capacity of writable character storage area for the flash memory card
 0 to 3147 (in K bytes)

NOTE 4: If the ribbon near end detection setting is specified, the ERROR LED blinks slowly, while the printer is in a ribbon near end state and displays messages 1, 2, or 3.

5.11 LCD MESSAGES IN DIFFERENT LANGUAGES (UPPER LINE OF LCD)

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

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

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

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

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

No.	JAPANESE
1	
2	
3	
4	
5	
6	
7	
8	
9	
10	
11	
12	
13	
14	
15	
16	
17	
18	
19	
20	
21	

* Japanese messages are omitted here.

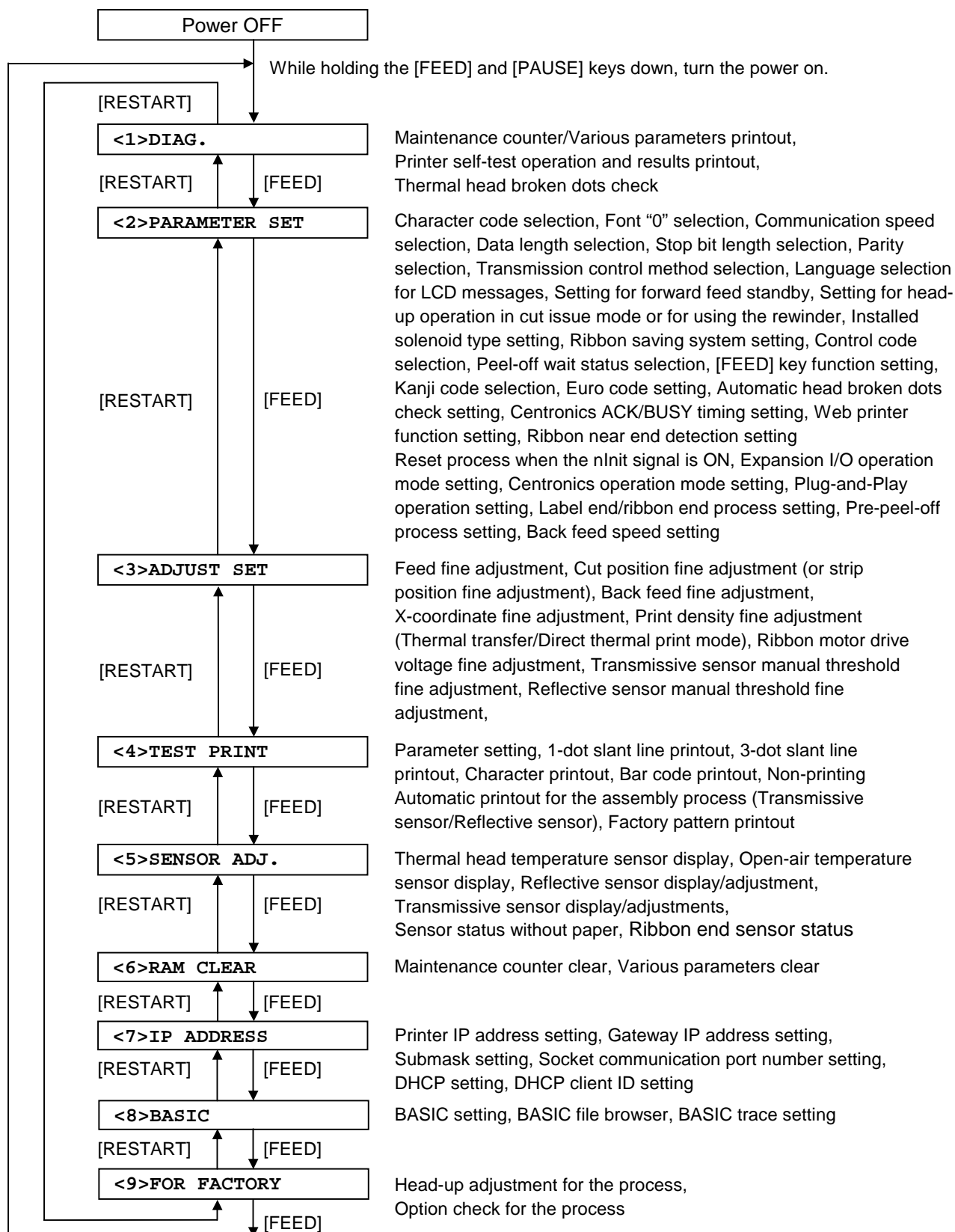
No.	Italian
1	PRONTA
2	TESTA APERTA
3	PAUSA *****
4	ERR. COMUNICAZ.
5	CARTA INCEP.*****
6	ERR. TAGL. *****
7	NO CARTA *****
8	NO NASTRO *****
9	TESTA APERTA*****
10	ERROR TESTA
11	TEMP. TESTA ALTA
12	ERR. NASTRO *****
13	RIAVV.PIENO *****
14	SALVA ### &&&&
	SALVA %%%%%%%%%
15	ERR.SCRITT.CARD
16	ERR.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

6. SYSTEM MODE

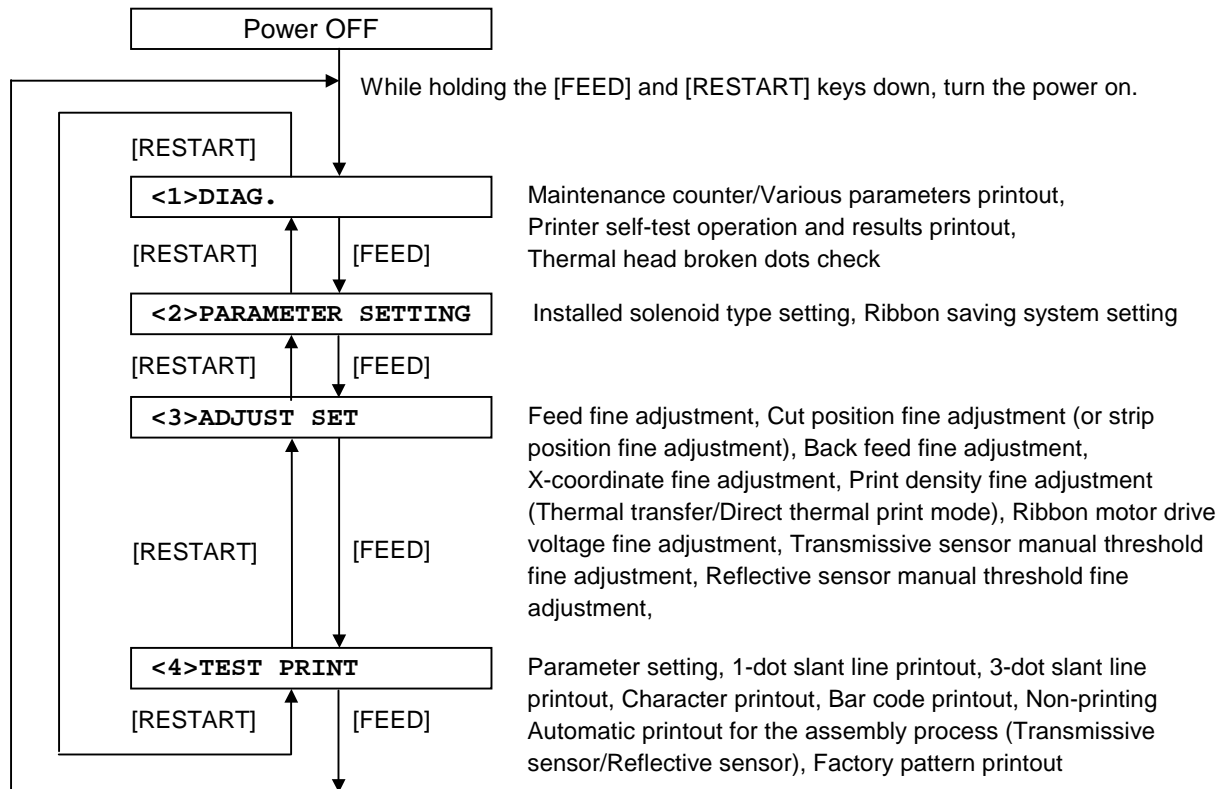
6.1 OUTLINE OF SYSTEM MODE

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

- System mode for service persons and system administrators (All system mode menus are available.)



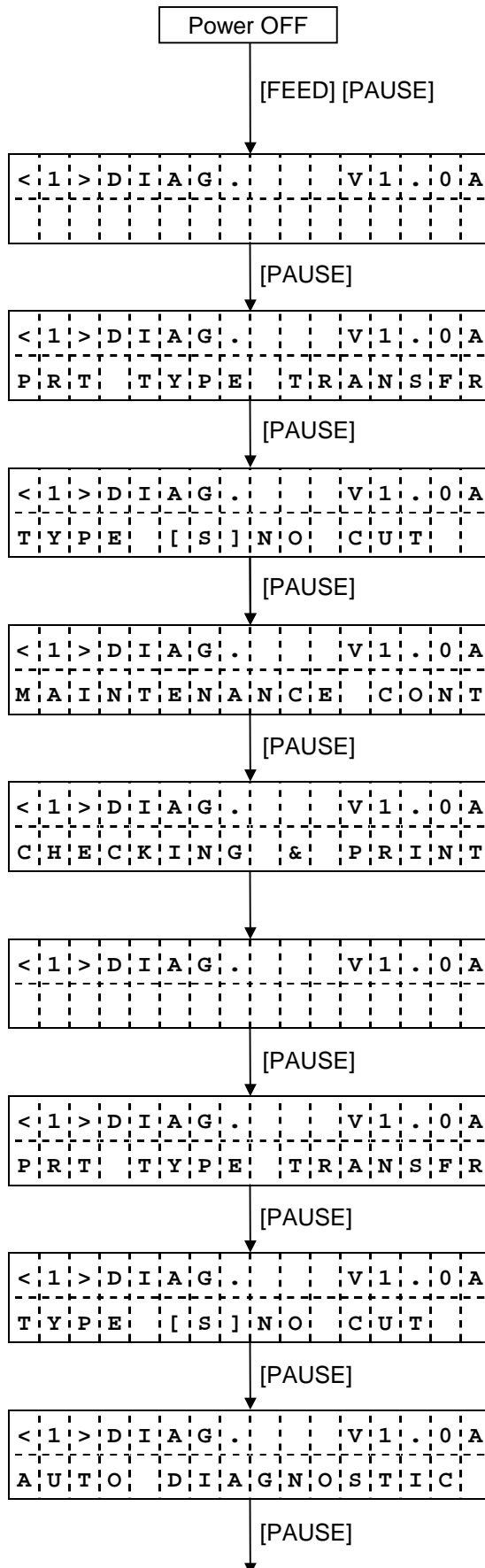
- System mode for users (Operable system mode menus are limited.)



6.2 SELF-TEST

6.2.1 Self-test Operation Example

(1) Maintenance counter/variou parameters printout, automatic self-test printout



(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) Maintenance counter/variou parameter print mode

(10) Press the [PAUSE] key.

(11) Start of maintenance counter/variou parameters check

(12) Results printout

(13) The self-test menu is displayed.

(14) Press the [PAUSE] key.

(15) Print type setting mode

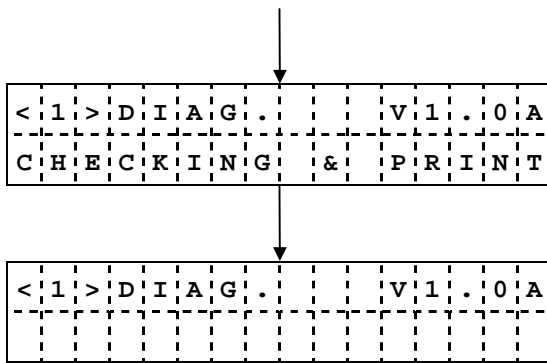
(16) Press the [PAUSE] key.

(17) Issue type setting mode

(18) Press the [PAUSE] key.

(19) Automatic self-test mode

(20) Press the [PAUSE] key.

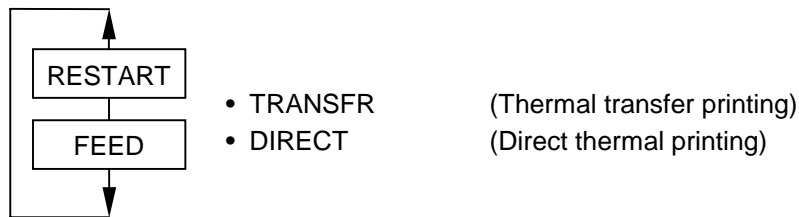


(21) Start of automatic self-test

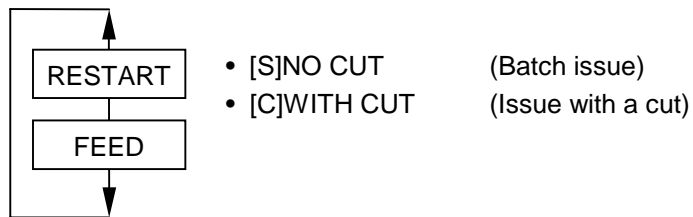
(22) Results printout

(23) The self-test menu is displayed.

Print type setting (PRT TYPE)

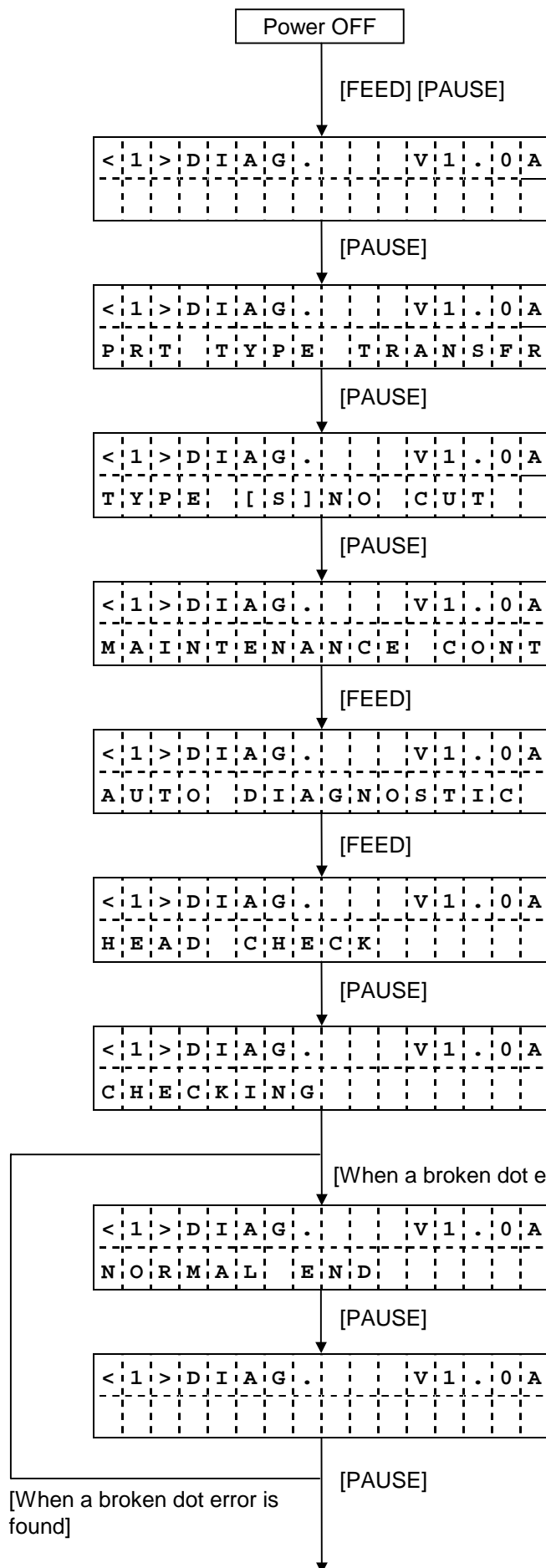


Issue type setting (TYPE)

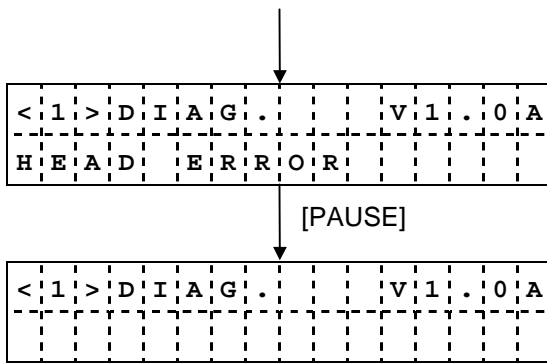


NOTE: When an error occurs while printing the results of the self-test, the error message is displayed and printing is stopped. The error is cleared by pressing the [PAUSE] key, then the system mode menu is displayed again. Printing is not automatically resumed after the error is cleared.

(2) Head broken dots 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) Maintenance counter/various parameters printout mode
- (10) Press the [FEED] key.
- (11) Automatic self-test mode
- (12) Press the [FEED] key.
- (13) Head broken dots check mode
- (14) Press the [PAUSE] key.
- (15) Start of head broken dots check
- (16) Results display (Normal end)
- (17) Press the [PAUSE] key.
- (18) The self-test menu is displayed.



(16') Results display (Error)

(17') Press the [PAUSE] key.

(18') The self-test menu is displayed.

6.2.2 Self-test Items

(1) Maintenance counter/various parameters printout

① Maintenance counter

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

② Various parameters

[Value programmed on the PC]

- Feed fine adjustment value
- Cut position (or strip position) fine adjustment value
- Back feed fine adjustment value
- Print density fine adjustment value (Thermal transfer print mode)
- Print density fine adjustment value (Direct thermal print mode)
- Ribbon motor drive voltage fine adjustment (Rewind)
- Ribbon motor drive voltage fine adjustment (Back tension)

[Value programmed using the keys]

- Feed fine adjustment value
- Cut position (or strip position) fine adjustment value
- Back feed fine adjustment value
- Print density fine adjustment value (Thermal transfer print mode)
- Print density fine adjustment value (Direct thermal print mode)
- Ribbon motor drive voltage fine adjustment (Rewind)
- Ribbon motor drive voltage fine adjustment (Back tension)
- X-coordinate fine adjustment value
- Reflective sensor manual threshold fine adjustment
- Transmissive sensor manual threshold fine adjustment
- Character code type
- Font "0"
- Communication speed
- Data length
- Stop bit length
- Parity
- Transmission control method
- Language for LCD messages
- Forward feed standby after an issue
- Head-up operation in cut issue mode/use of the rewinder
- Installed solenoid type setting
- Ribbon saving system setting
- Control code type
- Peel-off wait status selection
- [FEED] key function

- Kanji code type
- Euro code set value
- Automatic head broken dots check setting
- Centronics ACK/BUSY timing setting
- Web printer function setting
- Reset process when the nInit signal is ON
- Ribbon near end detection setting
- Expansion I/O operation mode setting
- Centronics operation mode setting
- Plug-and-play operation setting
- Label end/ribbon end process setting
- Pre-peel-off process setting
- Back feed speed setting
- IP address setting
- BASIC setting
- Socket communication port number setting
- BASIC interpreter setting
- DHCP setting
- Wireless LAN setting

(2) Automatic self-test

① Memory check

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

② Sensor check

- Strip sensor
- Thermal head open sensor
- Thermal head-up sensor
- Rewinder overflow sensor
- Cutter home position sensor
- Ribbon rewind motor sensor
- Ribbon back tension motor sensor
- Thermal head temperature sensor
- Open-air temperature sensor
- Heat sink sensor
- Reflective sensor
- Transmissive sensor
- Ribbon end sensor
- Thermal head resistance rank

③ Expansion I/O loop back check

④ Internal serial I/F loop back check

6.2.3 Self-test Results Printout Samples

(1) Maintenance counter/various parameters printout

```

TOTAL FEED  1.1km                [QQ]
FEED        1.1km
PRINT       0.5km
CUT         96
HEAD U/D    32
RIBBON      3h
SOLENOID    0h
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
HU CUT/RWD.   [OFF]
RIBBON SAVE   [ON:TAG] [TYPE2]
CODE          [AUTO]
PEEL OFF STATUS [ON]
FEED KEY      [FEED]
KANJI         [TYPE1]
EURO CODE     [B0]
AUTO HD CHK   [OFF]
ACK/BUSY      [TYPE1]
WEB PRINTER   [OFF]
INPUT PRIME   [ON]
RIBBON NEAR END [OFF]
EX.I/O MODE   [TYPE1]
CENTRO MODE   [SPP]
PLUG & PLAY   [OFF]
LBL/RBN END   [TYPE1]
PRE PEEL OFF  [OFF]
BACK SPEED    [STD]
PRTR IP ADDRESS [192.168.010.020]
GATE IP ADDRESS [000.000.000.000]
SUBNET MASK    [255.255.255.000]
TTF AREA       [640KB]
EXT CHR AREA   [128KB]
BASIC AREA     [ 64KB]
PC SAVE AREA   [ 64KB]
SOCKET PORT    [OFF] [08000]
BASIC          [OFF]
BASIC TRACE    [OFF]
DHCP           [OFF]
DHCP ID        [FFFFFFFFFFFFFFFFFFFF]
                [FFFFFFFFFFFF]
ESS ID         [SymbolAP      ]
                [              ]
CONNECTION     [INFRASTRUCTURE]
CHANNEL        [01]
AUTH           [OPEN SYSTEM]
WEP            [OFF]
WEP TYPE       [40bit]
SEND KEY       [1]
WEP KEY #1     [101112131415161718191A1B1C]
WEP KEY #2     [202122232425262728292A2B2C]
WEP KEY #3     [303132333435363738393A3B3C]
WEP KEY #4     [404142434445464748494A4B4C]

```


NOTE: Print conditions: 288 mm of label length, thermal transfer/direct thermal print mode^(*), no sensor used, 6 ips, one sheet to print, batch issue, no driving of paper rewind motor

(*) Depends on the print type setting.

(2) Automatic self-test printout

```
PROGRAM B-SX4T      7FM00226000
  MAIN 15OCT2002 V1.0A:1A00
  BOOT 20SEP2002 V1.0 :8500
FONT      5600
KANJI     NONE      :0000
          NONE      :0000
EEPROM    OK
SDRAM     8MB
CARD      SLOT 1   ATA
          SLOT 2   LAN
SENSOR1   00000000,00000111
SENSOR2   [H]23°C [A]22°C [S]25°C
          [R]4.2V [T]2.5V [E]0.6V
          [RANK]7
EXP.I/O   NG
EX.232C   NG
```

NOTES: 1. Print conditions: 87 mm of label length, thermal transfer/direct thermal print mode^(*), no sensor used, 6 ips, one sheet to print, batch issue, no driving of paper rewind motor

(*) Depends on the ribbon designation setting.

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

6.2.4 Self-test Printout Contents

(1) Maintenance counter

Item	Contents	Range
TOTAL FEED	Total label distance covered (cannot be cleared)	0.0 to 3200.0 km
FEED	Label distance covered	0.0 to 3200.0 km
PRINT	Print distance	0.0 to 200.0 km
CUT	Cut count	0 to 1000000
HEAD U/D	Head up/down count	0 to 2000000
RIBBON	Ribbon motor drive time	0 to 2000 hours
SOLENOID	Head-up solenoid drive time	0 to 1000 hours
232C ERR	RS-232C hardware error count	0 to 255
SYSTEM ERR	System error count	0 to 15
POWER FAIL	Momentary power interruption count	0 to 15

Maintenance Counter	Count Conditions
Total label distance covered Label distance covered	Counts when the paper feed motor is driven to feed a paper or print. (Counts also during a reverse feed operation.) When the power is off, the label distance of 50.0 cm or less may be rounded down and backed up.
Print distance	Counts while printing. (Counting is not performed during reverse feed operation.) When the power is off, the print distance of 8.2 m or less is rounded down and backed up.
Cut count	Every cut operation is counted. When the power is off, a cut count of 31 or less is rounded down and backed up.
Head up/down count	Counts head up/down operations using the ribbon saving solenoid. (Combination of up and down operations is counted as one.) When the power is off, an up/down count of 31 or less is rounded down and backed up.
Ribbon motor drive time	Counts when the ribbon motor is driven to feed a paper or print. (Counts also during a reverse feed operation.) When the power is off, a drive time of 32 seconds or less is rounded down and backed up.

Maintenance Counter	Count Conditions
Head-up solenoid drive time	Counts when the ribbon saving operation is performed. When the power is off, a drive time of 32 seconds or less is rounded down and backed up.
RS-232C hardware error count	Counts when a parity error or a framing error occurs. * When data of several bytes is transmitted continuously, counting is performed per byte.
System error count	Counts when a system error of No. 22 listed in section 5.10 "LCD MESSAGES AND LED INDICATIONS" occurs.
Momentary power interruption count	Counts when a momentary power interruption occurs.

(2) Various parameters check contents

Item	Contents	Remarks
[PC] FEED	Feed fine adjustment	-50.0 mm to +50.0 mm (See NOTE.)
CUT	Cut position (or strip position) fine adjustment	-50.0 mm to +50.0 mm (See NOTE.)
BACK	Back feed fine adjustment	-9.9 mm to +9.9 mm (See NOTE.)
TONE (T)	Print density fine adjustment (Thermal transfer print mode)	-10 to +10 step
TONE (D)	Print density fine adjustment (Direct thermal print mode)	-10 to +10 step
RBN (FW)	Ribbon motor drive voltage fine adjustment (Rewind)	-15 to +0 step
RBN (BK)	Ribbon motor drive voltage fine adjustment (Back tension)	-15 to +0 step
[KEY] FEED	Feed fine adjustment	-50.0 mm to +50.0 mm
CUT	Cut position (or strip position) fine adjustment	-50.0 mm to +50.0 mm
BACK	Back feed fine adjustment	-9.5 mm to +9.5 mm
TONE (T)	Print density fine adjustment (Thermal transfer print mode)	-10 to +10 step
TONE (D)	Print density fine adjustment (Direct thermal print mode)	-10 to +10 step
RBN (FW)	Ribbon motor drive voltage fine adjustment (Rewind)	-15 to +0 step
RBN (BK)	Ribbon motor drive voltage fine adjustment (Back tension)	-15 to +0 step
X ADJ .	X-coordinate fine adjustment	-99.5 mm to +99.5 mm
THRESHOLD<R>	Reflective sensor manual threshold fine adjustment	0.0 V to 4.0 V
THRESHOLD<T>	Transmissive sensor manual threshold fine adjustment	0.0 V to 4.0 V

Item	Contents	Remarks
FONT	Character code selection	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-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
	Font "0" selection	0 : No slash used Ø : Slash used
SPEED	Communication speed selection	2400: 2400 bps 4800: 4800 bps 9600: 9600 bps 19200: 19200 bps 38400: 38400 bps 115200: 115200 bps
DATA LENG.	Data length selection	7: 7 bits 8: 8 bits
STOP BIT	Stop bit length selection	1: 1 bit 2: 2 bits
PARITY	Parity selection	NONE: None parity ODD: ODD parity EVEN: EVEN parity
CONTROL	Transmission control method selection	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)

Item	Contents	Remarks
MESSAGE	Language selection for LCD messages	ENGLISH: English GERMAN: German FRENCH: French DUTCH: Dutch SPANISH: Spanish JAPANESE: Japanese ITALIAN: Italian
FORWARD WAIT	Forward feed standby after an issue	ON: Performed (A fine adjustment value for the stop position is also printed.) OFF: Not performed
HU CUT/RWD.	Head-up operation in cut issue mode, or use of the rewinder	ON: Head-up operation is performed, or the rewinder is used. OFF: Head-up operation is not performed, or the rewinder is not used.
RIBBON SAVE	Ribbon saving system setting	ON(TAG): Used when the head lever position is "TAG". ON(LBL): Used when the head lever position is "LABEL". OFF: Not used
	Installed solenoid type setting	TYPE 1 (TDS-12C) TYPE 2 (TDS-16A: Stronger pull force type)
CODE	Control code type	AUTO: Automatic selection ESC LF NUL: ESC LF NUL method { }: { } method xx○○△△ Any set code (Described in hex. code)
PEEL OFF STS	Peel-off wait status selection	ON: Selected OFF: Not selected
FEED KEY	[FEED] key function setting	FEED: One label is fed. PRINT: Data in the image buffer is printed on one label.
KANJI	Kanji code type	TYPE1: For Windows codes TYPE2: For original codes
EURO CODE	Euro code setting	Any set code
AUTO HD CHK	Automatic broken dots check setting	ON: Automatic broken dots check is performed. OFF: Automatic broken dots check is not performed.

Item	Contents	Remarks
ACK/BUSY	Centronics ACK/BUSY timing setting	TYPE 1: The ACK signal is sent to match the rising edge of ACK signal and the falling edge of the BUSY signal. TYPE 2: The ACK signal is sent to match the falling edge of ACK signal and the falling edge of the BUSY signal.
WEB PRINTER	Web printer function setting	ON: Enabled OFF: Disabled
INPUT PRIME	Reset process when the nlrit signal is ON	ON: Reset is performed. OFF: Reset is not performed.
RIBBON NEAR END	Ribbon near end detection setting	30 m: Ribbon near end state is detected when the remaining ribbon length is approximately 30 m. 70 m: Ribbon near end state is detected when the remaining ribbon length is approximately 70 m. OFF: Ribbon near end state is not detected.
EX.I/O MODE	Expansion I/O operation mode	TYPE1: Standard mode TYPE2: In-line mode
CENTRO MODE	Centronics operation mode	SPP: Compatibility mode ECP: ECP mode
PLUG & PLAY	Plug-and-play operation setting	ON: Plug-and-play operation is enabled. OFF: Plug-and-play operation is disabled.
LBL/RBN END	Label end/ribbon end process setting	TYPE1: When a label end or ribbon end state is detected, the printer stops even if it is printing. TYPE2: When a label end or ribbon end state is detected, the printer prints the current label as far as possible, then stops.
PRE PEEL OFF	Pre-peel-off process setting	ON: Pre-peel-off operation is performed. OFF: Pre-peel-off operation is not performed.
BACK SPEED	Back feed speed setting	STD: 3 ips LOW: 2 ips
PRTR IP ADDRESS	Printer IP address	***.***.***.***
GATE IP ADDRESS	Gateway IP address	***.***.***.***
SUBNET MASK	Subnet mask	***.***.***.***

Item	Contents	Remarks
TTF AREA	TrueType font storage area size	0 KB to 896 KB (in units of 64 KB)
EXT CHR AREA	Writable character storage area size	0 KB to 896 KB (in units of 64 KB)
BASIC AREA	BASIC file storage area size	0 KB to 896 KB (in units of 64 KB)
PC SAVE AREA	PC saving area size	0 KB to 896 KB (in units of 64 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 setting	ON: BASIC interpreter function is enabled. OFF: BASIC interpreter function is disabled.
BASIC TRACE	BASIC interpreter trace setting	ON: Trace function is enabled. OFF: Trace function is disabled.
DHCP	DHCP setting	ON: DHCP function is enabled. OFF: DHCP function is disabled.
DHCP ID	DHCP ID setting	Max. 16 characters
ESS ID	Wireless LAN: ESS ID	Max. 32 characters
CONNECTION	Wireless LAN: Connection setting	INFRASTRUCTURE: Infrastructure mode ADHOC: Adhoc mode
CHANNEL	Wireless LAN: Connection channel setting	Channel number: 00 to 14
AUTH	Wireless LAN: Authentication method	OPEN SYSTEM: Open system method SHARED KEY: Shared key method
WEP	Wireless LAN: Encryption setting	ON: Encryption is enabled. OFF: Encryption is disabled.
WEP TYPE	Wireless LAN: Encryption key setting	40bit: 40-bit encryption is used. 128bit: 128-bit encryption is used.
SEND KEY	Wireless LAN: Encryption key to be used at transmission	1 to 4
WEP KEY #1	Wireless LAN: Encryption key #1	13-byte fixed length (When the WEP type is 40bit, the leading 5 bytes are effective.)
WEP KEY #2	Wireless LAN: Encryption key #2	13-byte fixed length (When the WEP type is 40bit, the leading 5 bytes are effective.)
WEP KEY #3	Wireless LAN: Encryption key #3	13-byte fixed length (When the WEP type is 40bit, the leading 5 bytes are effective.)
WEP KEY #4	Wireless LAN: Encryption key #4	13-byte fixed length (When the WEP type is 40bit, the leading 5 bytes are effective.)

NOTE: The head density is 8 dots/mm. If the value is set to "x.2 mm" or "x.3 mm", the operation to be performed is the same for both. Therefore, "x.3 mm" is printed on the maintenance counter printout, even if "x.2 mm" is set. Similarly, if "x.7 mm" is set, "x.8 mm" is printed on the maintenance counter printout.

(3) Memory check contents

PROGRAM B-SX4T 7FM00226000
 — Part number
MAIN 15OCT2002 V1.0A:1A00
 — Creation date (Day-Month-Year)
 — Version (v1.0 A)
 — Checksum (1A00)
 — Revision (A)
 — Version (v1.0)
 Name PROGRAM: Program area

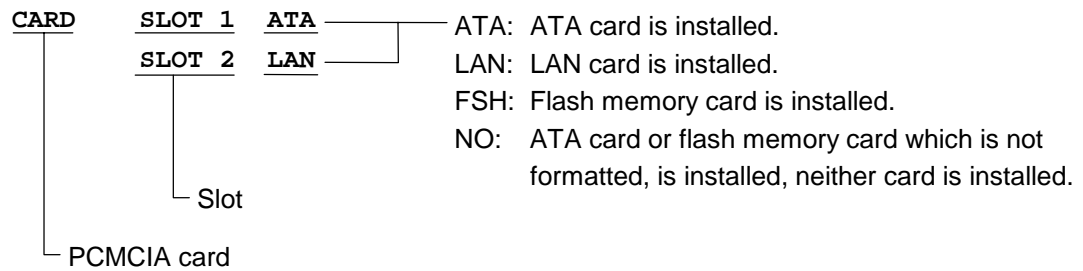
BOOT 20SEP2002 V1.0 :8500
 — Creation date (Day-Month-Year)
 — Version (V1.0)
 — Checksum (8500)
 — Revision (A)
 — Version (v1.0)
 Name BOOT: Boot area

FONT 5600
 — Checksum of font area

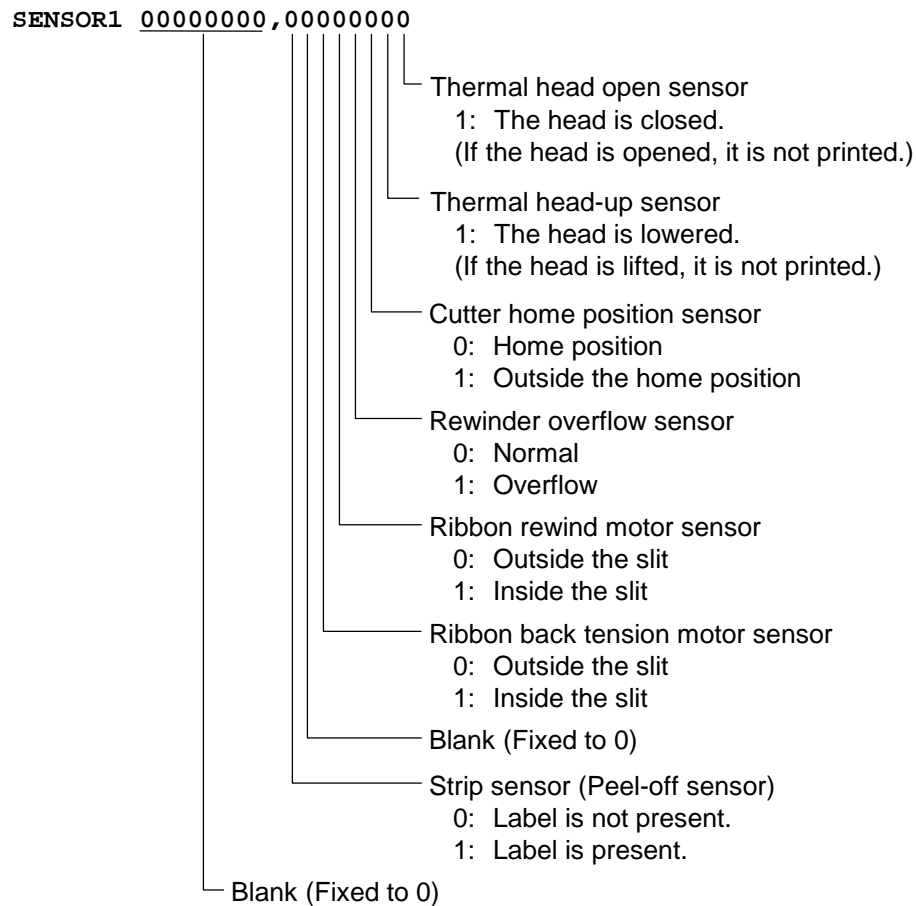
KANJI NONE : 0000 — Checksum of bit map Kanji ROM for Gothic font
 — NONE: No Kanji ROM installed
 — GOTHIC: Bit map Kanji ROM for Gothic font installed
NONE : 0000 — Checksum of bit map Kanji ROM for Mincho font (or Chinese Kanji)
 — NONE: No Kanji ROM installed
 — MINCHO: Bit map Kanji ROM for Mincho font installed
 — CHINESE: Bit map Kanji ROM for Chinese Kanji installed

EEPROM OK
 — OK: Data in the check area can be properly read/written.
 — NG: Data in the check area cannot be properly read/rewritten.
 — Back up memory (EEPROM)

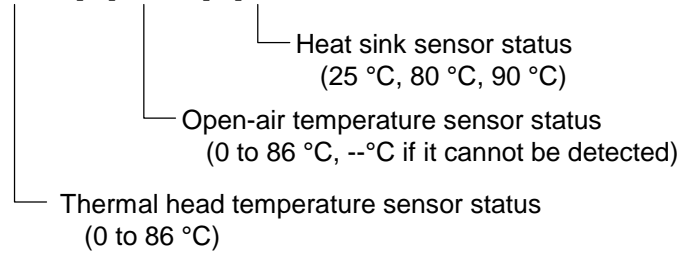
SDRAM 8MB
 — Capacity of SDRAM (8 MB for B-SX4T, 16 MB for B-SX5T)
 — Memory for the system and drawing



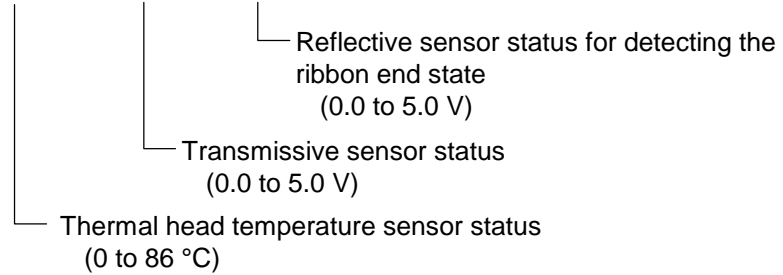
(4) Sensor check contents



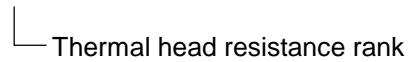
SENSOR2 [H]20°C [A]22°C [S]25°C



[R]4.2V [T]2.5V [E]2.7V



[RANK] 7



Resistance rank	Average resistance (ohm)
0	748 to 758
1	759 to 770
2	771 to 782
3	783 to 794
4	795 to 806
5	807 to 818
6	819 to 831
7	832 to 843
8	844 to 856
9	857 to 869
10	870 to 883
11	884 to 896
12	897 to 910
13	911 to 924
14	925 to 938
15	939 to 952

(5) Expansion I/O check contents

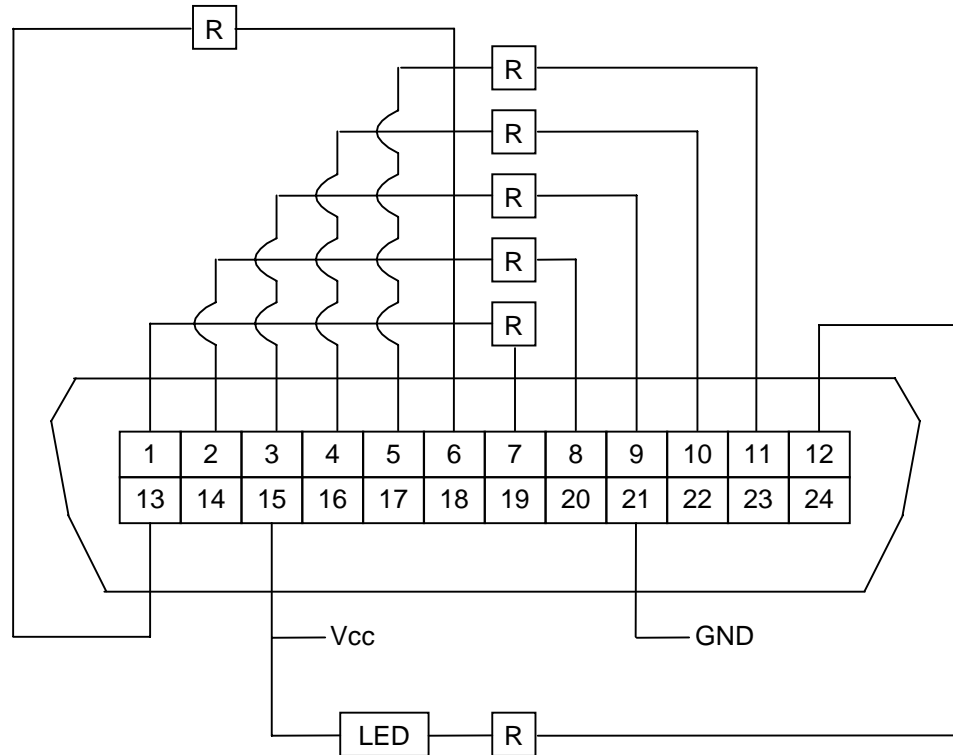
EXP. I/O **NG**

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 high output/high input, low output/low input.



R = 300 ohms

Connector: FCN-781P024-G/P

(6) Internal serial I/F check contents

EX. 232C **NG**

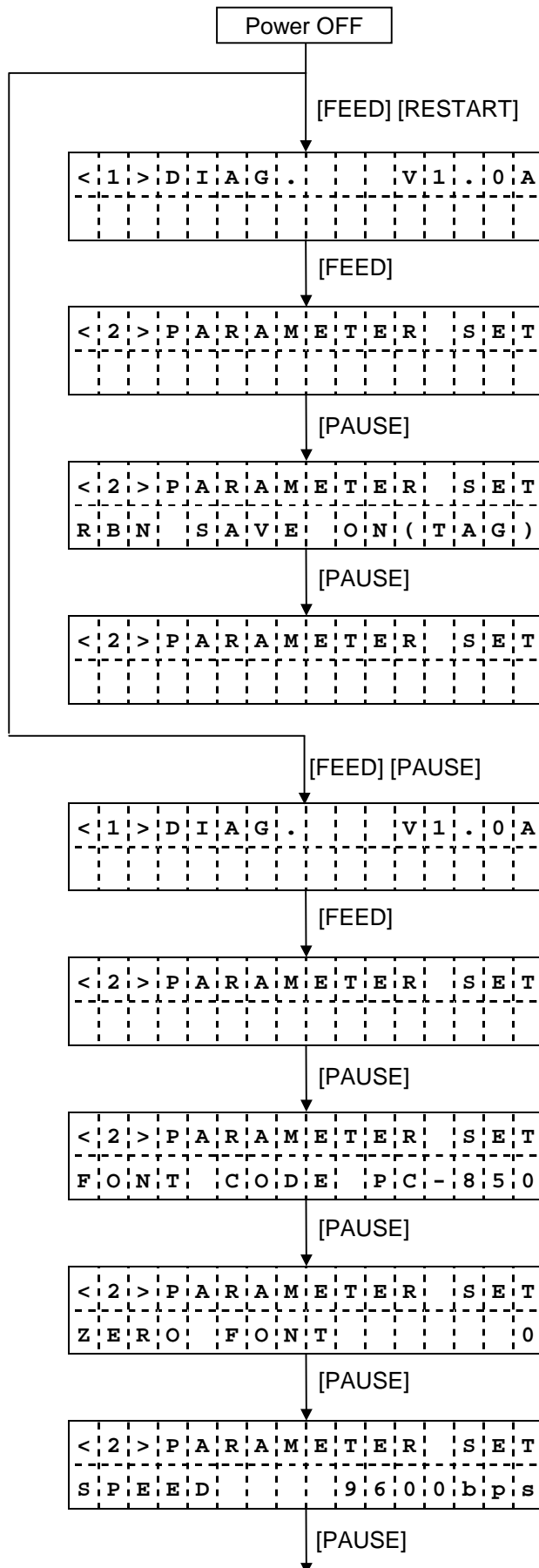
OK: Normal data

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

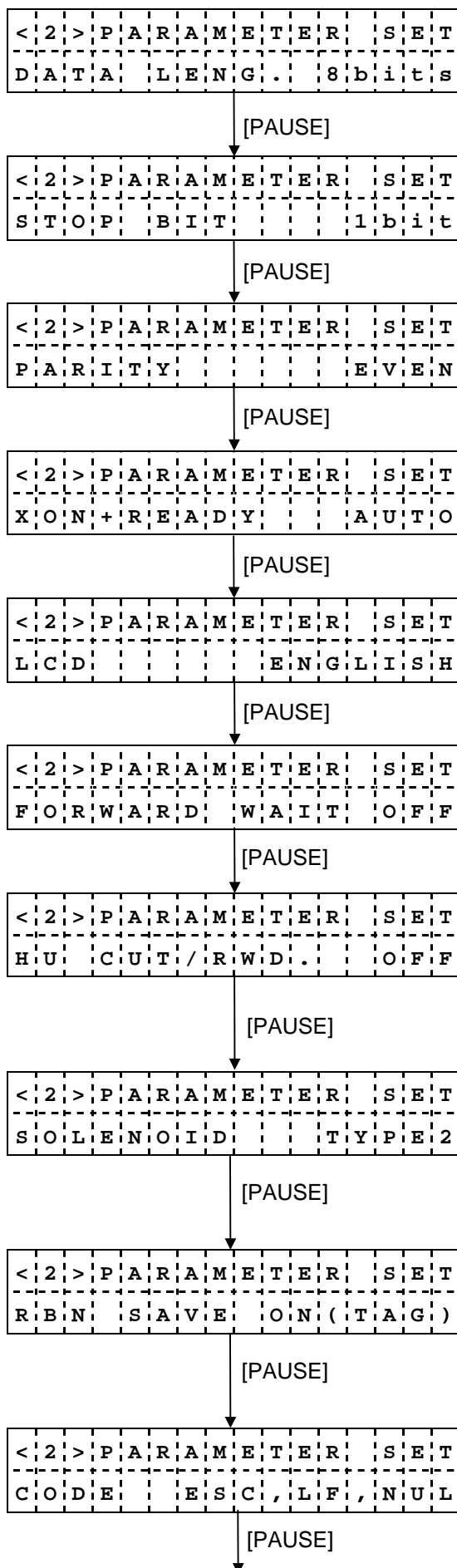
Internal serial I/F

6.3 VARIOUS PARAMETERS SETTING

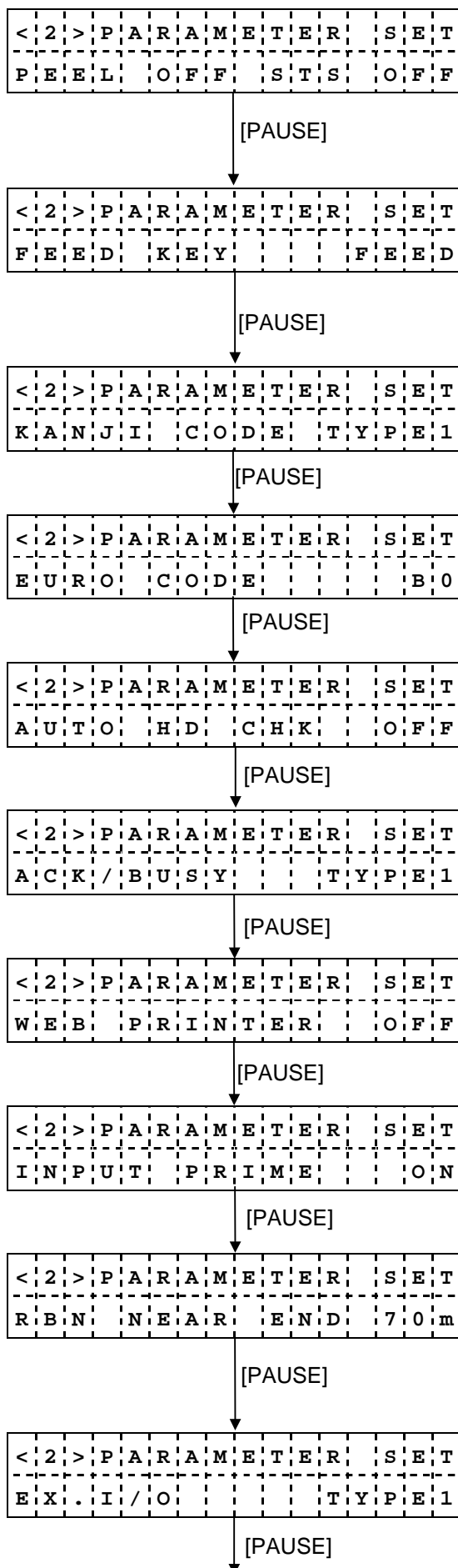
6.3.1 Various Parameters Setting Operation Example



- (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) Ribbon saving system selection: Select an option using the [FEED] and [RESTART] keys.
- (8) Press the [PAUSE] key.
- (9) System mode menu display (Parameter setting)
- (2) While holding the [FEED] and [PAUSE] keys down, turn the power on.
- (3) The self-test menu is displayed.
- (4) Press the [FEED] key.
- (5) System mode menu display (Parameter setting)
- (6) Press the [PAUSE] key.
- (7) Font code selection: Select the code using the [FEED] and [RESTART] keys.
- (8) Press the [PAUSE] key.
- (9) Font "0" selection: Select the font using the [FEED] and [RESTART] keys.
- (10) Press the [PAUSE] key.
- (11) Communication speed selection: Select the communication speed using the [FEED] and [RESTART] keys.
- (12) Press the [PAUSE] key.



- (13) Data length selection:
Select the data length using the [FEED] and [RESTART] keys.
- (14) Press the [PAUSE] key.
- (15) Stop bit length setting:
Select the stop bit length using the [FEED] and [RESTART] keys.
- (16) Press the [PAUSE] key.
- (17) Parity setting:
Select the parity using the [FEED] and [RESTART] keys.
- (18) Press the [PAUSE] key.
- (19) Transmission control method selection:
Select the transmission control method using the [FEED] and [RESTART] keys.
- (20) Press the [PAUSE] key.
- (21) Language selection for LCD messages:
Select the language for LCD messages using the [FEED] and [RESTART] keys.
- (22) Press the [PAUSE] key.
- (23) Setting for forward feed standby:
Make the forward feed standby setting using the [FEED] and [RESTART] keys.
- (24) Press the [PAUSE] key.
- (25) Setting for head-up operation in cut issue mode:
Make the head-up operation setting or the rewinder use setting using the [FEED] and [RESTART] keys.
- (26) Press the [PAUSE] key.
- (27) Installed solenoid type setting:
Set which type of solenoid is installed, TYPE 1 or TYPE 2, with the [FEED] and [RESTART] keys.
- (28) Press the [PAUSE] key.
- (29) Ribbon saving system setting:
Determine whether or not the ribbon saving system is used with the [FEED] and [RESTART] keys.
- (30) Press the [PAUSE] key.
- (31) Control code selection:
Select the code using the [FEED] and [RESTART] keys.
- (32) Press the [PAUSE] key.



- (33) Peel-off wait status selection:
Set the peel-off wait status selection using the [FEED] and [RESTART] keys.
- (34) Press the [PAUSE] key.
- (35) [FEED] key function setting:
Make the setting for the [FEED] key function using the [FEED] and [RESTART] keys.
- (36) Press the [PAUSE] key.
- (37) Kanji code selection:
Select the Kanji code using the [FEED] and [RESTART] keys.
- (38) Press the [PAUSE] key.
- (39) Euro code setting:
Set the Euro code using the [FEED] and [RESTART] keys.
- (40) Press the [PAUSE] key.
- (41) Automatic head broken dots check setting:
Set the automatic head broken dots check using the [FEED] and [RESTART] keys.
- (42) Press the [PAUSE] key.
- (43) Centronics ACK/BUSY timing setting:
Select the ACK/BUSY timing using the [FEED] and [RESTART] keys.
- (44) Press the [PAUSE] key.
- (45) Web printer function setting:
Set the function for a web printer using the [FEED] and [RESTART] keys.
- (46) Press the [PAUSE] key.
- (47) Reset process when the nlnit signal is ON:
Set the reset process using the [FEED] and [RESTART] keys.
- (48) Press the [PAUSE] key.
- (49) Ribbon near end detection setting:
Select the remaining ribbon length to be detected as a ribbon near end state using the [FEED] and [RESTART] keys.
- (50) Press the [PAUSE] key.
- (51) Expansion I/O operation mode setting:
Select the operation mode using the [FEED] and [RESTART] keys.
- (52) Press the [PAUSE] key.

<	2	>	P	A	R	A	M	E	T	E	R	S	E	T
C	E	N	T	R	O	.	M	O	D	E	S	P	P	

[PAUSE]

<	2	>	P	A	R	A	M	E	T	E	R	S	E	T
P	L	U	G	&	P	L	A	Y	O	F	F			

[PAUSE]

<	2	>	P	A	R	A	M	E	T	E	R	S	E	T
L	B	L	/	R	B	N	E	N	D	T	Y	P	1	

[PAUSE]

<	2	>	P	A	R	A	M	E	T	E	R	S	E	T
P	R	E	P	E	E	L	O	F	F	O	F	F		

[PAUSE]

<	2	>	P	A	R	A	M	E	T	E	R	S	E	T
B	A	C	K	S	P	E	E	D	S	T	D			

[PAUSE]

<	2	>	P	A	R	A	M	E	T	E	R	S	E	T

(53) Centronics operation mode setting:
Select the operation mode using the [FEED] and [RESTART] keys.

(54) Press the [PAUSE] key.

(55) Plug-and-play operation setting:
Set the plug-and-play operation using the [FEED] and [RESTART] keys.

(56) Press the [PAUSE] key.

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

(58) Press the [PAUSE] key.

(59) Back feed speed setting:
Select the back feed speed using the [FEED] and [RESTART] keys.

(60) Press the [PAUSE] key.

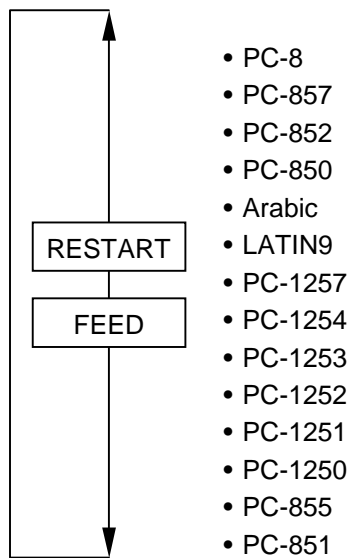
(61) Back feed speed setting:
Select the back feed speed using the [FEED] and [RESTART] keys.

(62) Press the [PAUSE] key.

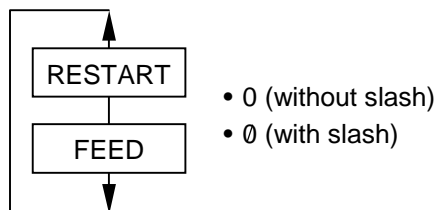
(63) The parameter setting menu is displayed.

6.3.2 Setting Contents

(1) Character code selection (FONT CODE)



(2) Font "0" selection (ZERO FONT)



NOTE: The following fonts do not support a zero with a slash. Therefore, even if a zero with a slash is specified, a zero without a slash is used.

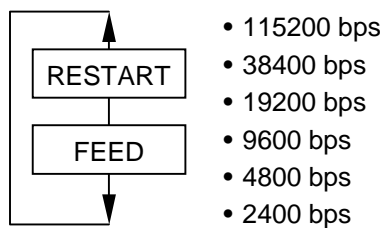
[Bit map fonts]

OCR-A, OCR-B, GOTHIC725 Black, Kanji, Chinese Kanji

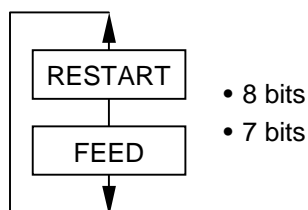
[Outline fonts]

Price fonts 1, 2, and 3, DUTCH801 Bold, BRUSH738 Regular, GOTHIC725 Black, TrueType font

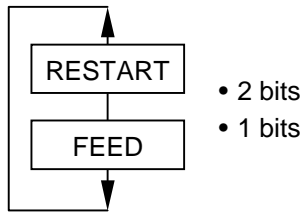
(3) RS-232C communication speed selection (SPEED)



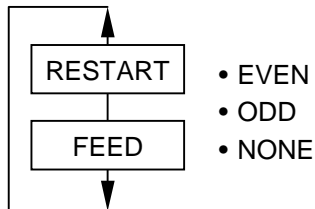
(4) RS-232C data length selection (DATA LENG.)



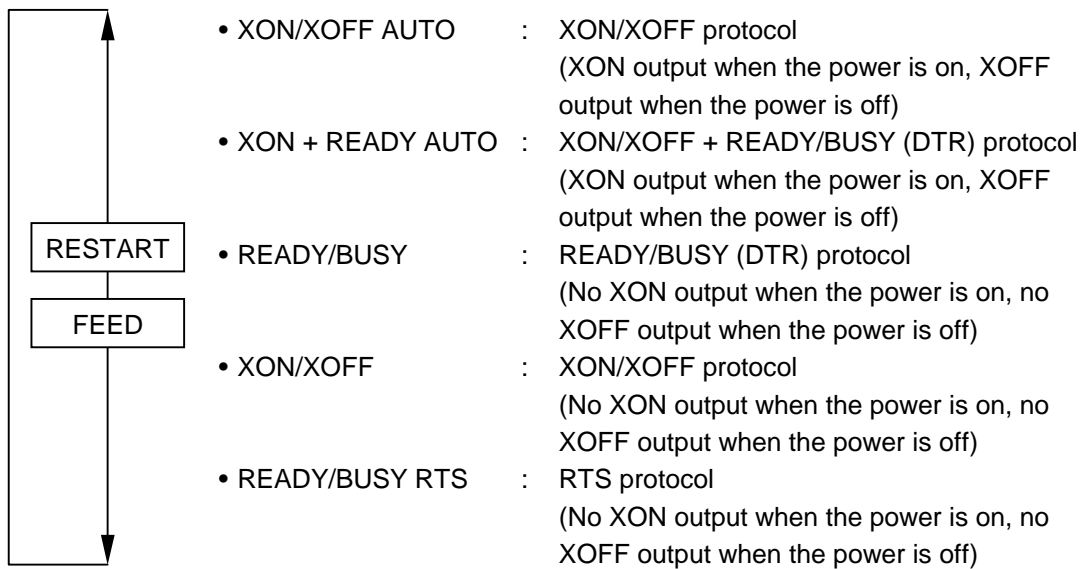
(5) RS-232C stop bit length selection (STOP BIT)



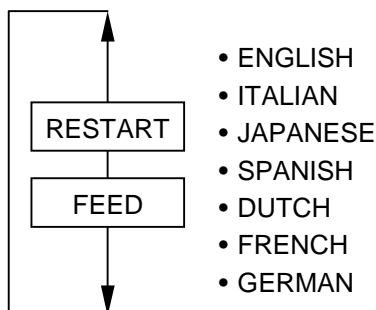
(6) RS-232C parity selection (PARITY)



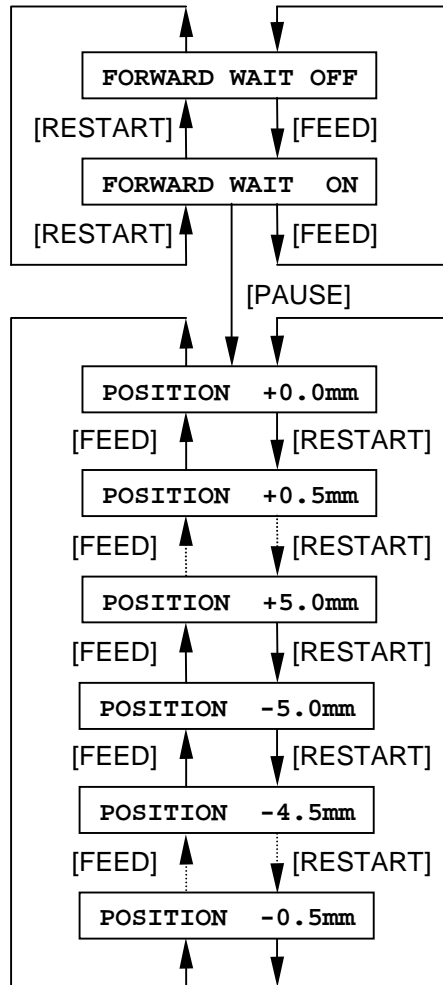
(7) RS-232C transmission control method selection (XON/XOFF, READY/BUSY)



(8) Language selection for LCD messages (LCD)



(9) Setting for forward feed standby after an issue (FORWARD WAIT)

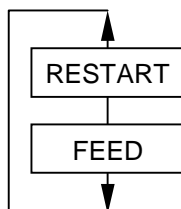


- OFF: Not performed
- ON: Performed

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

- 5.0 mm to +5.0 mm
- +: Performs a longer length of a forward feed, then stops.
- : Performs a shorter length of a forward feed, then stops.

(10) Setting for head-up operation in cut issue mode, or for using the rewinder (HU CUT/RWD.)

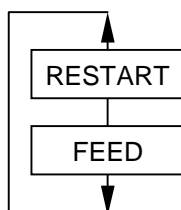


- OFF: Head-up operation is not performed/the rewinder is not used.
- ON: Head-up operation is performed/the rewinder is used.

When a cut issue is performed, this head-up operation setting takes effect. When a batch issue is performed, the rewinder setting takes effect.

NOTE: If the solenoid temperature is high when a cut issue is about to be performed with the head lifted, the head may not be lifted.

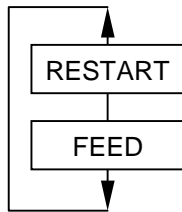
(11) Installed solenoid type setting (SOLENOID)



- TYPE 1: TDS-12C (wound with blue tape) is installed.
- TYPE 2: TDS-16A (stronger pull force type wound with black tape) is installed.

NOTE: If this setting does not match the actually installed solenoid type, ribbon saving function may not be able to work.

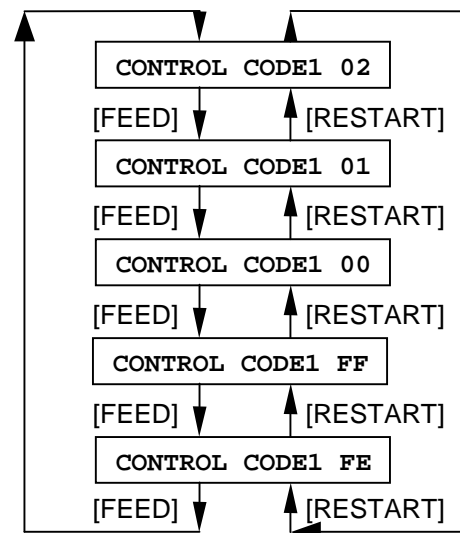
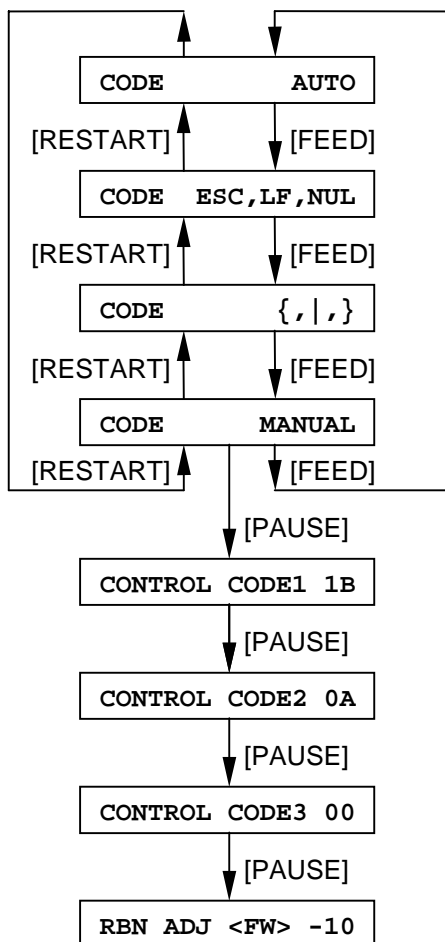
(12) Ribbon saving system setting (RIBBON SAVE)



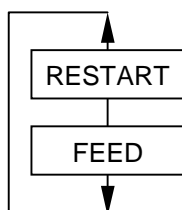
- OFF: The ribbon saving system is not used.
- ON (LBL): The ribbon saving system is used when the head lever position is "LABEL".
- ON (TAG): The ribbon saving system is used when the head lever position is "TAG".

NOTE: If the ribbon saving system is used unless the ribbon saving module has been installed, the ribbon may sag during feeding/printing, and printing cannot be performed properly. Be careful with this setting

(13) Control code selection (CODE)

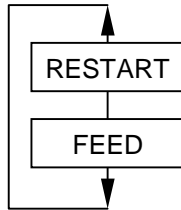


(14) Peel-off wait status selection (PEEL OFF STS)



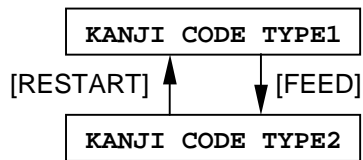
- OFF: No peel-off wait status selection
- ON: Peel-off wait status selection

(15) [FEED] key function setting (FEED KEY)



- FEED: One label is fed.
- PRINT: Data in the image buffer is printed on one label.

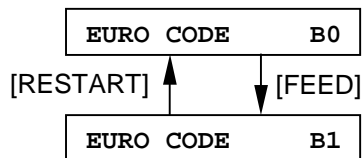
(16) Kanji code selection (KANJI CODE)



TYPE 1: For WINDOWS codes

TYPE 2: For original codes

(17) Euro code setting

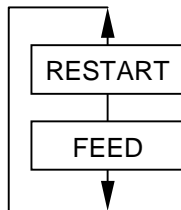


20H



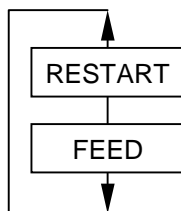
FFH

(18) Automatic head broken dots check setting (AUTO HD CHK)



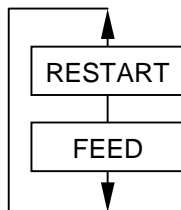
- OFF: Head broken dots check is not automatically performed.
- ON: Head broken dots check is automatically performed.

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



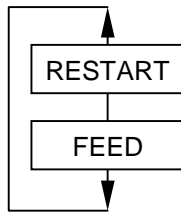
- TYPE 1
- TYPE 2

(20) Web printer function setting (WEB PRINTER)



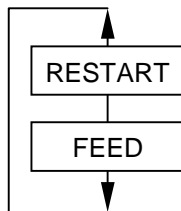
- OFF: Web printer function is disabled.
- ON: Web printer function is enabled.

(21) Reset process when the nInit signal is ON (INPUT PRIME)



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

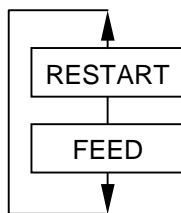
(22) Ribbon near end detection setting (RBN NEAR END)



- 70 m: A ribbon near end state is detected when the remaining ribbon length is 70 m.
- 30 m: A ribbon near end state is detected when the remaining ribbon length is 30 m.
- OFF: A ribbon near end state is not detected.

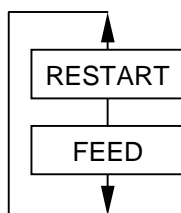
NOTE: *There are some variations in detecting the ribbon near end state. It is preferable to use this setting for reference purposes.*

(23) Expansion I/O operation mode setting (EX. I/O)



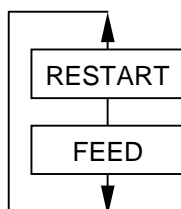
- TYPE1: Standard mode
- TYPE2: In-line mode

(24) Centronics operation mode setting (CENTRO.)



- SPP: Compatibility mode
- ECP: ECP mode

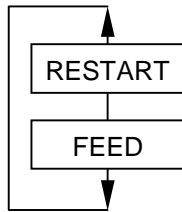
(25) Plug-and-play operation setting (PLUG & PLAY)



- OFF: Plug-and-play operation is disabled.
- ON: Plug-and-play operation is enabled.

NOTE: *In the USB interface, plug-and-play operation is always enabled, regardless of this setting.*

(26) Label end/ribbon end process setting (LBL/RBN END)



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

- TYP1: When a label end or ribbon end is detected in the middle of printing, printing is immediately stopped. When the printing is restarted, first the initial feed is performed, and then the printer starts printing from the unfinished label.
- TYP2: TYPE 2 is available only when the ribbon saving function is set to OFF. If the ON (LBL) or ON (TAG) is selected, TYPE 1 will be automatically performed regardless of the selection.

[Label end]

When a label end is detected in the middle of printing, the printer completes the half-finished label and stops when the next label is at the home position, displaying the error message "NO PAPER X". ("X" indicates the remaining number of labels.) The remaining number of labels = [Specified number of labels] – [The number of finished labels including half-finished one]
If a label end is detected while the specified last label is printed, the position of "X" will be blank.

When the printing is restarted, first the initial feed is performed, and then the printer starts printing from the next label. In case of the label end while the specified last label is printed, only the initial feed is performed, and if the status response is set to ON, an issue end status is sent following a feed end status.

[Ribbon end]

- When a ribbon end is detected when the unfinished label length is 30 mm or more, printer prints for 20 mm and stops printing, displaying an error message "NO RIBBON X". ("X" indicates the remaining number of labels.)
The remaining number labels = [Specified number of labels] – [The number of finished labels] – 1
If a ribbon end is detected while the specified last label is printed, the position of "X" will be blank.
When the printing is restarted, first the initial feed is performed, and then the printer starts printing from the next label. In case of the ribbon end while the specified last label is printed, only the initial feed is performed.

- When a ribbon end is detected where the unfinished label length is less than 30 mm, the printer completes the half-finished label and stops printing when the next label is at the home position, displaying the error message “NO RIBBON X”. (“X” indicates the remaining number of labels.)

The remaining number of labels = [Specified number of labels] – [The number of finished labels including half-finished one]

If a ribbon end is detected while the specified last label is printed, the position of “X” will be blank.

When the printing is restarted, first the initial feed is performed, and then the printer starts printing from the next label.

In case of the ribbon end while the specified last label is printed, only the initial feed is performed, and if the status response is set to ON, an issue end status is sent following a feed end status.

Example of LBL/RBN END TYP2

[Case 1] Specified number of labels = 5, A label end is detected while the 3rd label is printed.

(1st)(2nd)(3rd)



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

When printing is restarted, first the initial feed is performed, then 4th and 5th labels are printed. Finally, all of 5 labels have been finished.

[Case 2] Specified number of labels = 5, A ribbon end is detected while the 3rd label is printed. Unfinished label length is 30 mm or more.

(1st)(2nd)(3rd)



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

When printing is restarted, first the initial feed is performed, then 4th and 5th labels are printed. Finally, 1st, 2nd, 4th, and 5th labels have been finished.

[Case 3] Specified number of labels = 5, A ribbon end is detected while the 3rd label is printed. Unfinished label length is less than 30 mm.

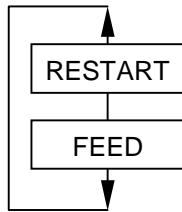
(1st)(2nd)(3rd)



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

When printing is restarted, first the initial feed is performed, then 4th and 5th labels are printed. Finally all of 5 labels have been finished.

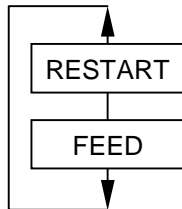
(27) Pre-peel-off process setting (PRE PEEL OFF)



- OFF: Pre-peel-off operation is not performed..
- ON: Pre-peel-off operation is performed.

NOTE: When the printer speed "10 ips" is specified, the pre-peel-off operation is performed, even if it is set to OFF in this setting.

(28) Back feed speed setting (BACK SPEED)



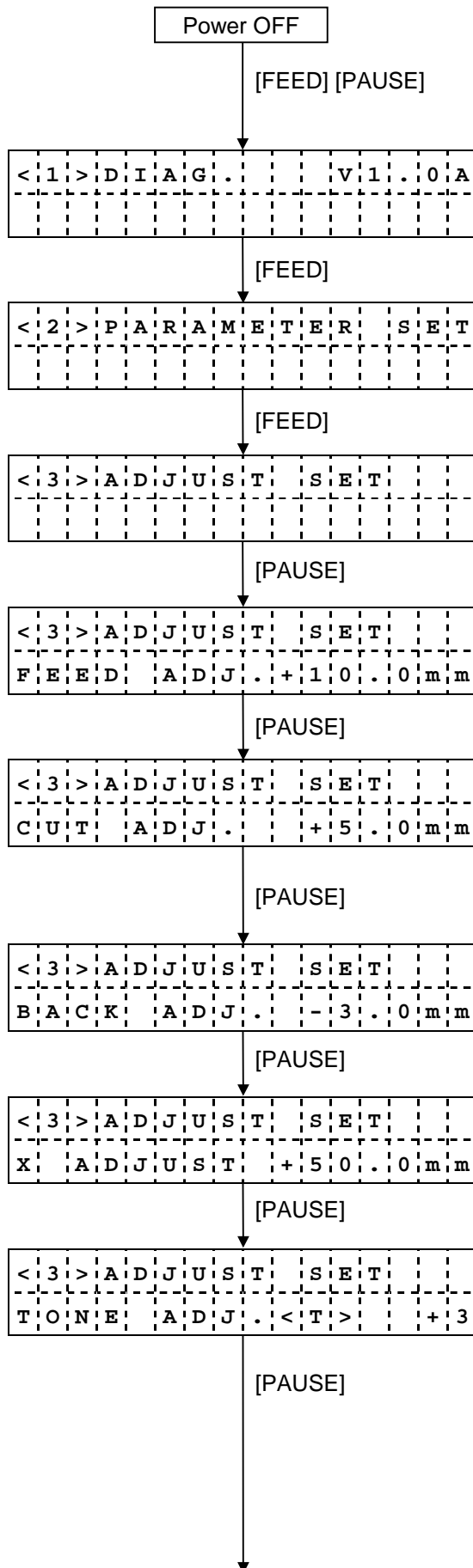
- STD: 3 ips
- LOW: 2 ips

Supplementary explanation

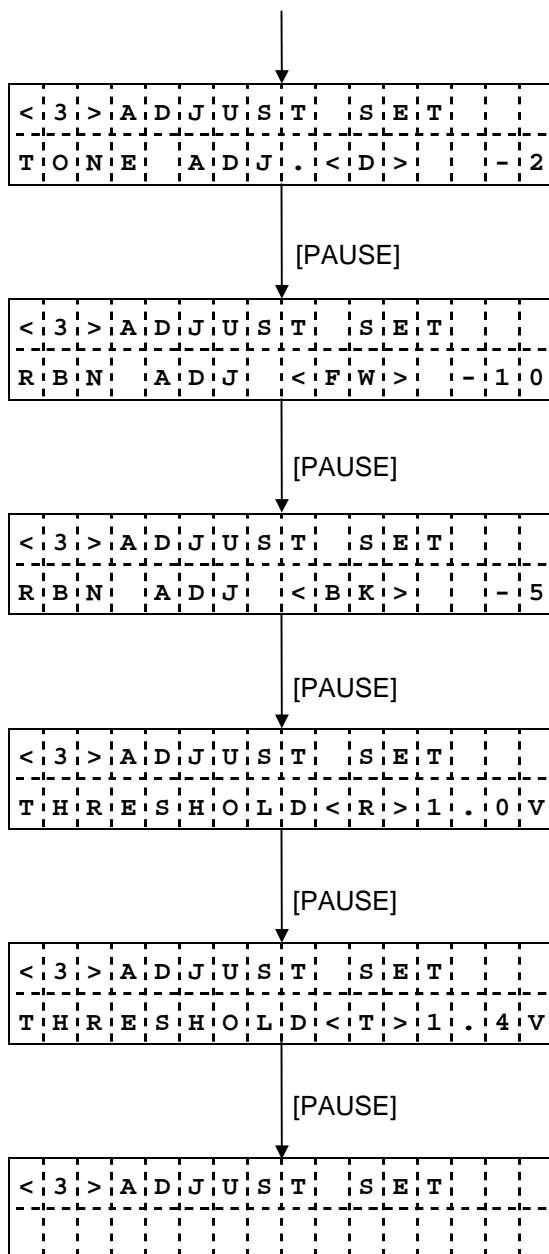
- When the [RESTART] and [FEED] keys are pressed at the same time, the display shows the system mode menu.
- If the [RESTART] or [FEED] key is held down for 0.5 seconds or more when a parameter is being set, the printer enters the repeat mode, in which the key is entered repeatedly.
- A changed parameter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

6.4 FINE ADJUSTMENT VALUE SETTING

6.4.1 Fine Adjustment Value Setting Operation Example



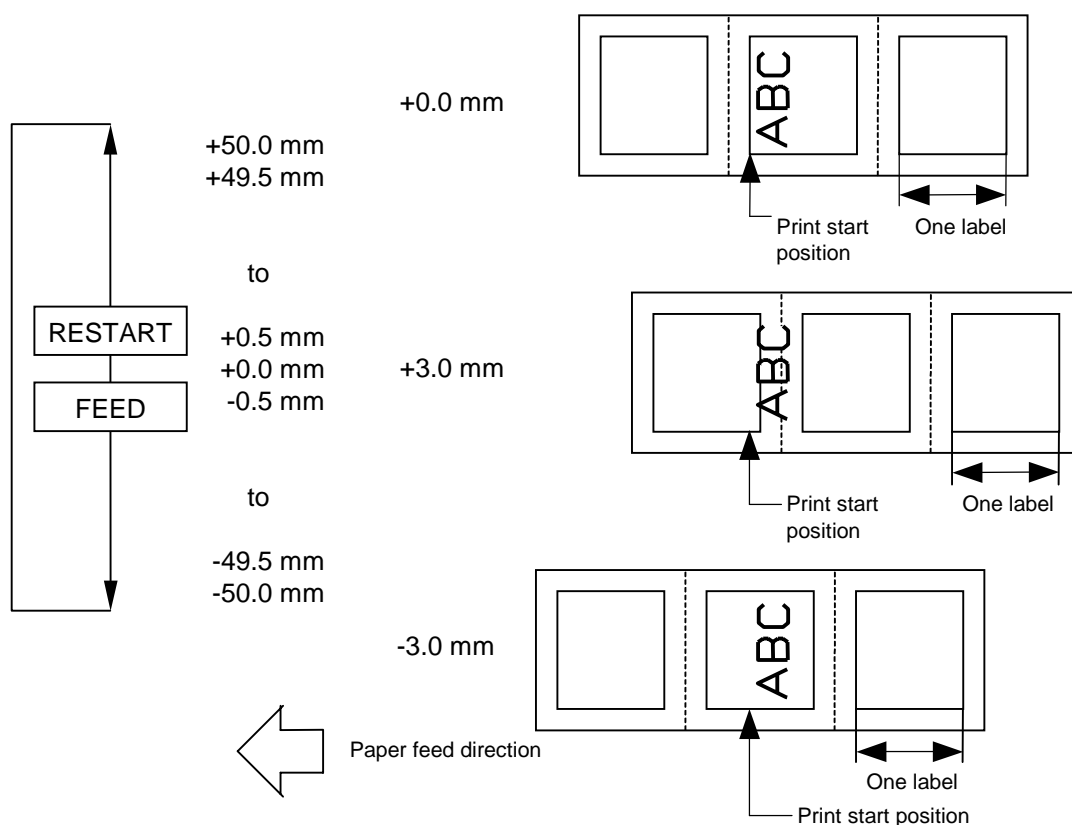
- (1) Power off state
- (2) While holding the [FEED] and [PAUSE] keys down, turn the power on.
- (3) The self-test menu is displayed.
- (4) Press the [FEED] key.
- (5) System mode menu display (Parameter setting)
- (6) Press the [FEED] key.
- (7) System mode menu display (Fine adjustment value setting)
- (8) Press the [PAUSE] key.
- (9) Feed fine adjustment:
Set the fine adjustment value using the [FEED] and [RESTART] keys.
- (10) Press the [PAUSE] key.
- (11) Cut position (or strip position) fine adjustment:
Set the fine adjustment value using the [FEED] and [RESTART] keys.
- (12) Press the [PAUSE] key.
- (13) Back feed fine adjustment:
Set the fine adjustment value using the [FEED] and [RESTART] keys.
- (14) Press the [PAUSE] key.
- (15) X-coordinate fine adjustment:
Set the fine adjustment value using the [FEED] and [RESTART] keys.
- (16) Press the [PAUSE] key.
- (17) Print density fine adjustment (Thermal transfer print mode):
Set the fine adjustment value using the [FEED] and [RESTART] keys.
- (18) Press the [PAUSE] key.



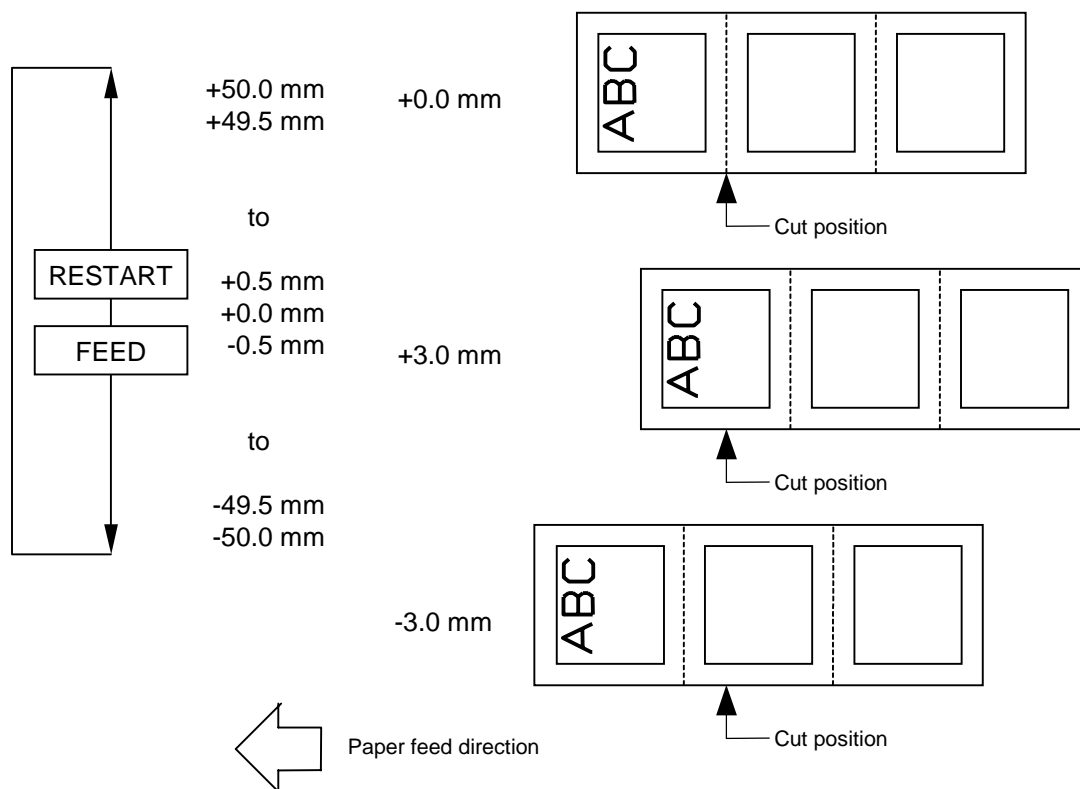
- (19) Print density fine adjustment (Direct thermal print mode):
Set the fine adjustment value using the [FEED] and [RESTART] keys.
- (20) Press the [PAUSE] key.
- (21) Ribbon motor drive voltage fine adjustment (Rewind):
Set the fine adjustment value using the [FEED] and [RESTART] keys.
- (22) Press the [PAUSE] key.
- (23) Ribbon motor drive voltage fine adjustment (Back tension):
Set the fine adjustment value using the [FEED] and [RESTART] keys.
- (24) Press the [PAUSE] key.
- (25) Reflective sensor manual threshold fine adjustment:
Set the fine adjustment value using the [FEED] and [RESTART] keys.
- (26) Press the [PAUSE] key.
- (27) Transmissive sensor manual threshold fine adjustment:
Set the 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 Setting Contents

(1) Feed fine adjustment (FEED ADJ.)



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



[Procedure for label having label pitch of less than 38 mm when the swing cutter is used]

The minimum label pitch of the label which can be cut in normal use is 38.0 mm. When a label having a label pitch of less than 38.0 mm is used (although it is out of specifications), the edge of the label is caught by the edge of the thermal head during a back feed to the home position after cutting the gap area between labels. Therefore, the label may not be fed back to the proper home position. By performing either method below, the problem will be solved.

[Method 1] Lift the head.

When the following conditions are all met, the cut operation is as follows.

Head lifted → Forward feed to the cut position → Head lowered → Cut →

Head lifted → Reverse feed to the home position → Head lowered

Conditions: Issue Command, Feed Command, and Eject Command received.

Label pitch of 38.0 mm or less, cut performed, transmissive sensor designated, cut position fine adjustment of ±10.0 mm or less, and issue mode "C"

* The head is lifted/lowered only when the optional ribbon save module is attached and the ribbon saving system is set to ON in the parameter setting. When the ribbon save module is not installed, use Method 2 since the head is not lifted/lowered.

NOTES: 1. If the head is lifted up when the edge of the label being ejected passes the paper feed roller, the sensor may not be able to detect an error even if it occurs (a feed cannot be performed).

2. If the head-up solenoid temperature is high when a cut issue is about to be performed with the head lifted, the head may not be lifted.

[Method 2] Adjust the cut position value.

When this procedure is used, one or more printed labels are left between the head and the cutter. Therefore, these labels should be removed by an issue or a label feed.

(a) Cut position fine adjustment value calculation

The cut position fine adjustment value can be calculated using the following method. If a back feed to the proper home position cannot be performed using this value, the cut position should be adjusted with any value.

$$\begin{aligned}\text{Cut position fine adjustment value} &= (\text{Number of labels left between head and cutter}) \times (\text{Label pitch}) \\ &= \left(\frac{32.8 \text{ mm}}{\text{Label pitch}} \right) \times (\text{Label pitch})\end{aligned}$$

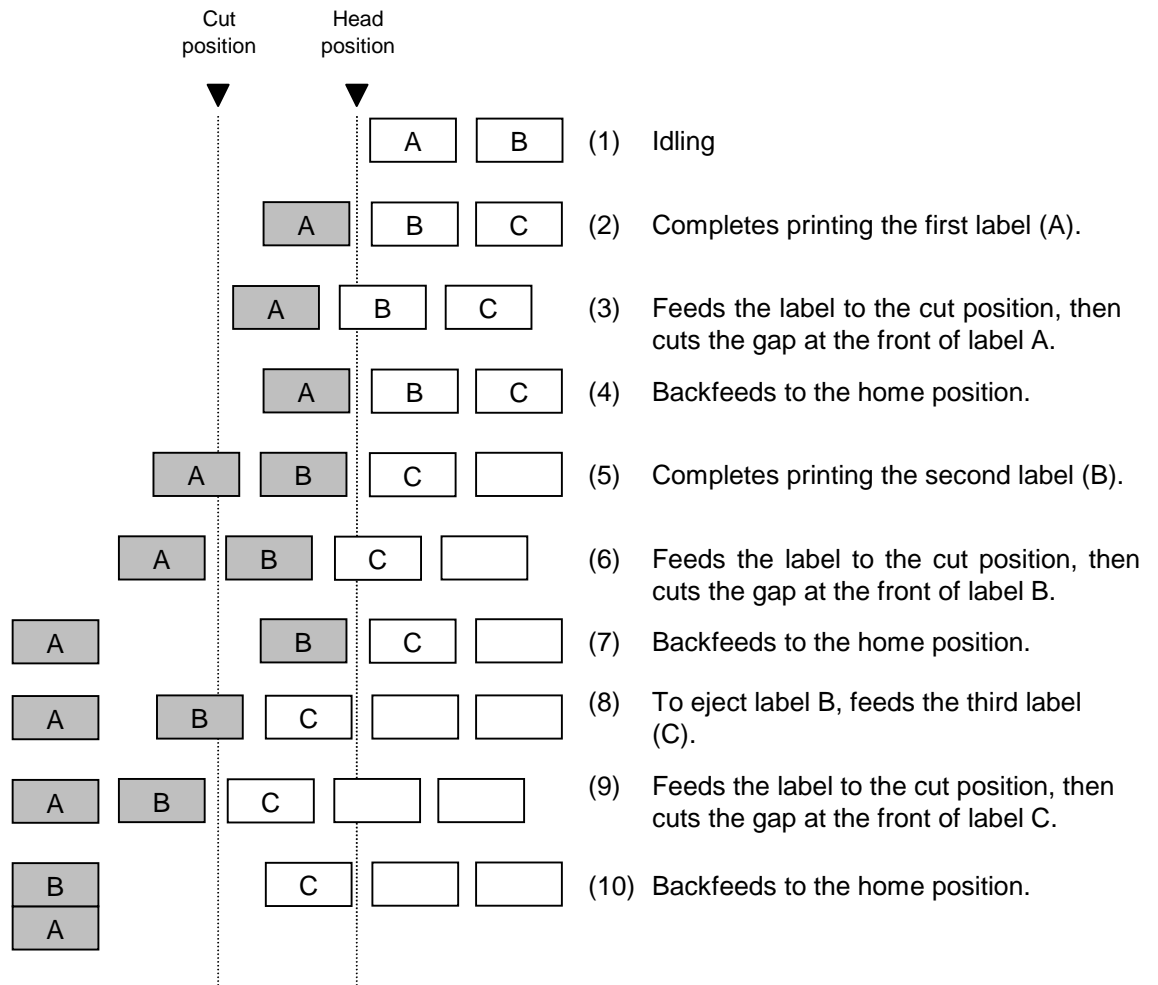
* Any decimal remainders are dropped.

Ex) Label pitch: 30.0 mm

$$\begin{aligned}\text{Cut position fine adjustment value} &= \left(\frac{32.8 \text{ mm}}{30.0 \text{ mm}} \right) \times (30.0 \text{ mm}) \\ &= 1 \times 30.0 \text{ mm} \\ &= +30.0 \text{ mm}\end{aligned}$$

(b) Operation example

Issue count: 2, Cut interval = 1



[Procedure for label having less than the min. label pitch for each issue speed when the rotary cutter is used]

When the following conditions are all met, the cut operation for the last label to be cut is as follows.

Forward feed to the cut position → Cut with feeding → Feed stops →
Head lifted → Reverse feed to the home position → Head lowered

Conditions: Issue Command, Feed Command, and Eject Command received.

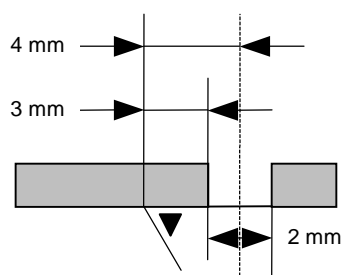
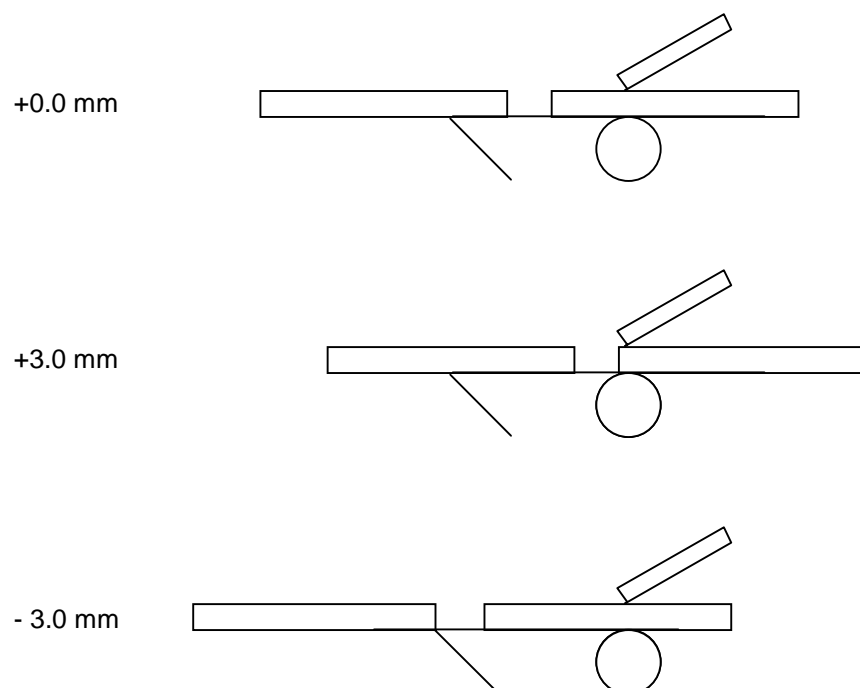
Label pitch: Less than the min. label pitch for each issue speed,
cut performed, transmissive sensor designated, cut position fine
adjustment of ± 10.0 mm or less, and issue mode "C"

- * For the Issue Command, this procedure is effective only for the last label to be cut when the next Issue Command is not received.
- * The head is lifted/lowered only when the optional ribbon save module is attached and the ribbon saving system is set to ON in the parameter setting. When the ribbon save module is not installed, the head-up/down operations are not performed. See "NOTES" below.

NOTES: 1. *If the head is being lifted up when the edge of the label which is being ejected passes the paper feed roller, the sensor may not be able to detect an error even if it occurs (a feed cannot be performed more).*

2. *If the head-up solenoid temperature is high when a cut issue is about to be performed with the head lifted, the head may not be lifted.*

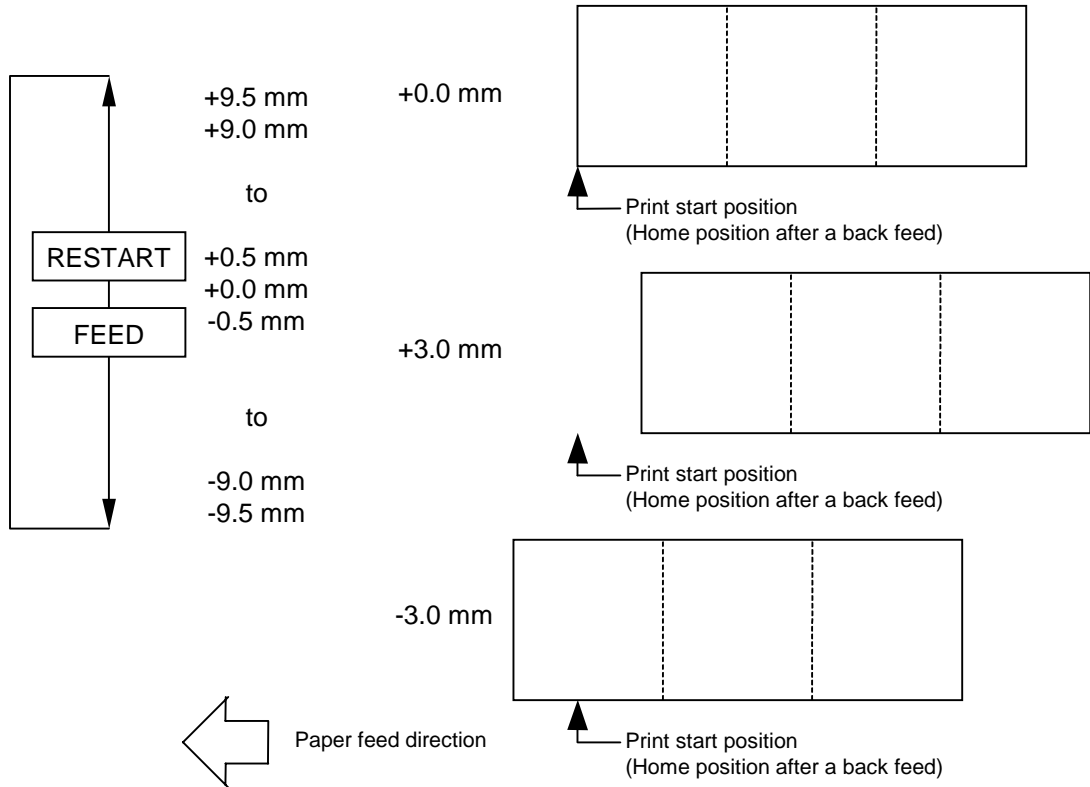
[Strip position fine adjustment]



Printing in strip issue mode is stopped at the position where the distance from the middle point of the gap between labels to the end of the strip shaft is 4 mm, since the gap between labels is assumed to be 2 mm.

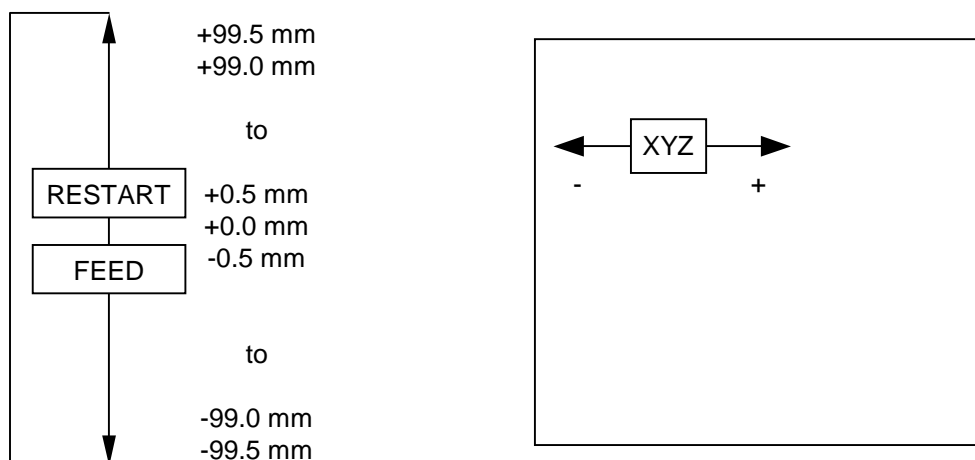
When the print stop position is not proper due to a greater gap, the print stop position should be adjusted using the strip position fine adjust function.

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

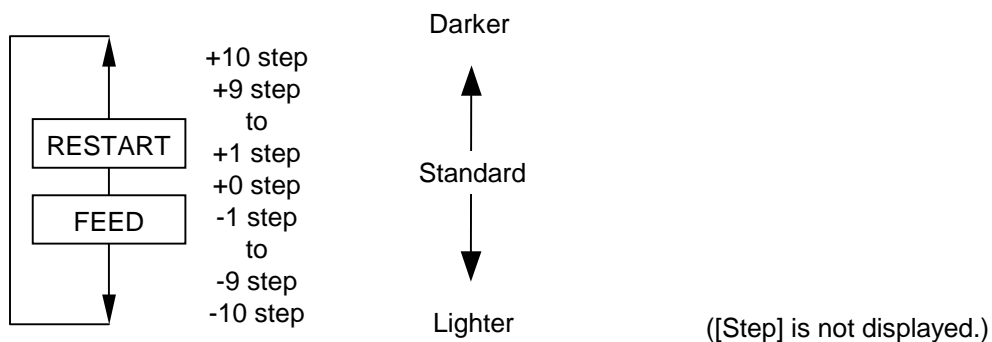


NOTE: There may be cases where a label is not returned to the home position depending on the print conditions, even if a backfeed, of which the length is the same as the forward feed, is performed. In issues where any paper sensor is used, if the label pitch length is almost the same as the distance between the thermal print head and the paper sensors (75.5 mm), a label/tag may not be returned to the home position when operations with a backfeed (such as cut issues, strip issues, automatic forward feed standby) are performed. It may result in an error. In such cases, to prevent an error from occurring, the backfeed length should be increased by performing the back feed fine adjustment in the + direction.

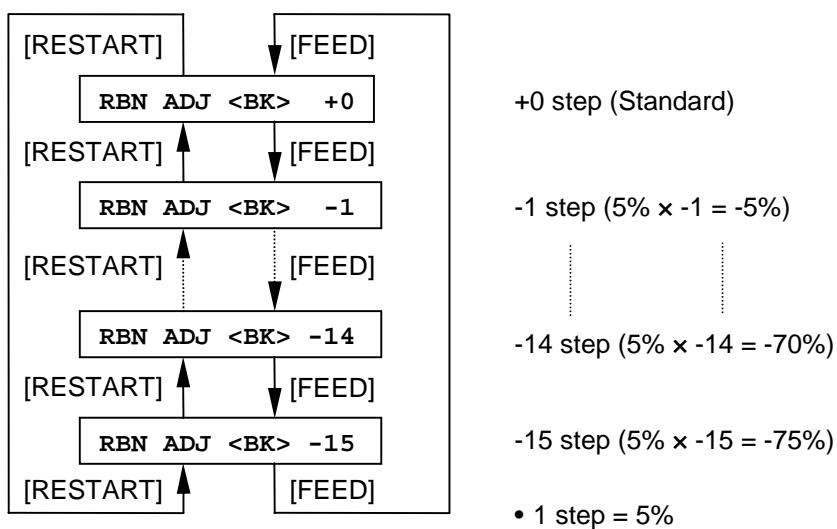
(4) X-coordinate fine adjustment (X ADJUST.)



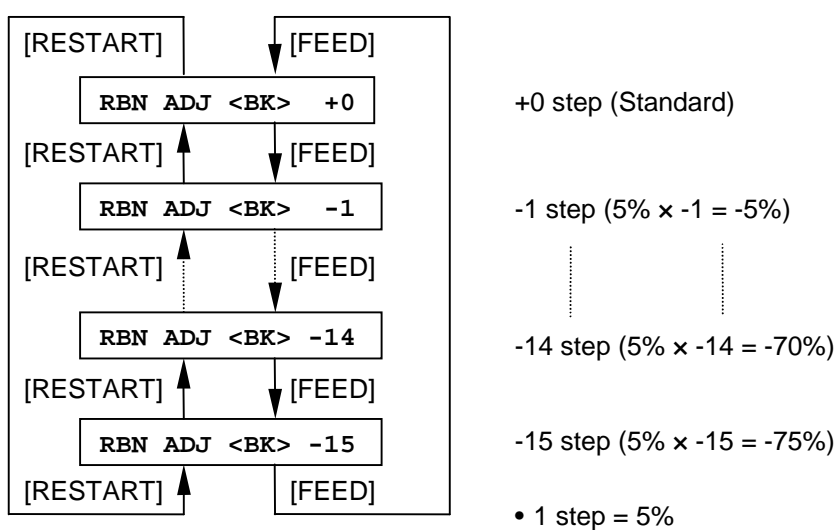
(5) Print density fine adjustment (Thermal transfer/direct thermal) (TONE ADJ.)



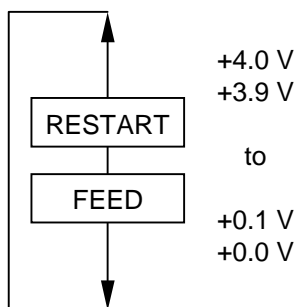
(6) Ribbon motor drive voltage fine adjustment setting (Rewind) (RBN ADJ <FW>)



(7) Ribbon motor drive voltage fine adjustment setting (Back tension) (RBN ADJ <BK>)

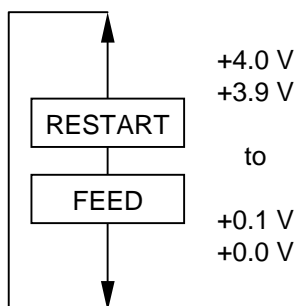


(8) Transmissive sensor manual threshold fine adjustment setting (THRESHOLD<T>)



NOTE: If "0.0 V" is set, when the power is turned OFF then ON, the value "0.0 V" is returned to the initial value (1.0 V).

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



NOTE: If "0.0 V" is set, when the power is turned OFF then ON, the value "0.0 V" is returned to the initial value (1.4 V).

Supplementary explanation

- 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 or more when a fine adjustment value is being set, the printer enters the 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 the sum of the fine adjustment parameter programmed on the printer and the fine adjustment command from the PC. However, the maximum values for each fine adjustment are as follows:

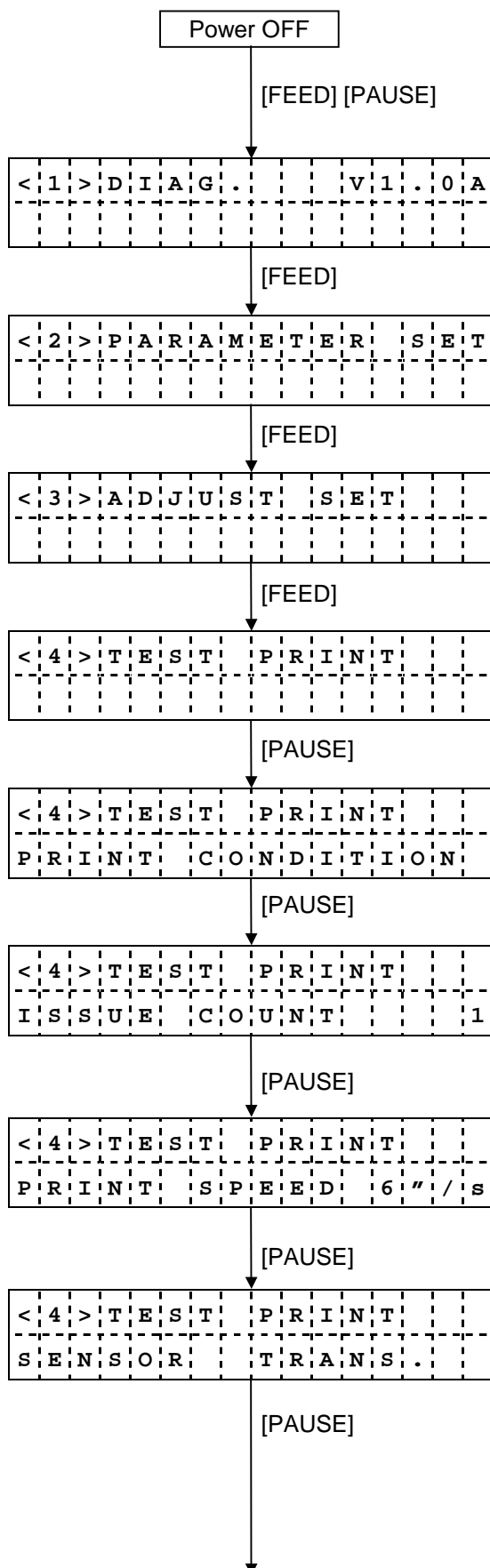
Feed fine adjustment	±50.0 mm
Strip position fine adjustment.....	±50.0 mm
Back feed fine adjustment	±9.9 mm
Print density fine adjustment.....	±10 step
X-coordinate fine adjustment	±99.5 mm
Ribbon motor drive voltage fine adjustment (Rewind)	-15 to +0 step
Ribbon motor drive voltage fine adjustment (Back tension)	-15 to +0 step
- The X-coordinate fine adjustment is performed to finely adjust the X-coordinate of the drawing in the left or right direction. Adjust the X-coordinate in the effective print range. (After the value reaches the coordinate "0", the value remains unchanged even if a subsequent fine adjustment is performed in the negative direction.)
- The X-coordinate fine adjustment is not effective for the self-test results printout (maintenance counter, various parameters, and automatic self-test) and the test print.
- The print density fine adjustment value is +0 step at the time of shipment from the factory.
- The ribbon rewind/back tension motors drive voltage fine adjustment values are the sum of the fine adjustment by the command (from the PC) and the fine adjustment in the system mode (by key operation). The maximum fine adjustment values are -15 for both the ribbon rewind motor and the ribbon back tension motor.
- The print density fine adjustment value is the sum of the fine adjustment by command (from the PC) and the fine adjustment in the system mode (by key operation). The respective max. fine adjustment values are ±10. The max. value for each print speed is as below. When the value exceeds the maximum, it is automatically corrected to the max. value, and then the printer prints.

Print speed	Direct thermal print mode	Thermal transfer print mode
3 ips	+10 step	+10 step
5 ips	—	—
6 ips	+8 step	+8 step
8 ips	—	—
10 ips	+4 step	+4 step

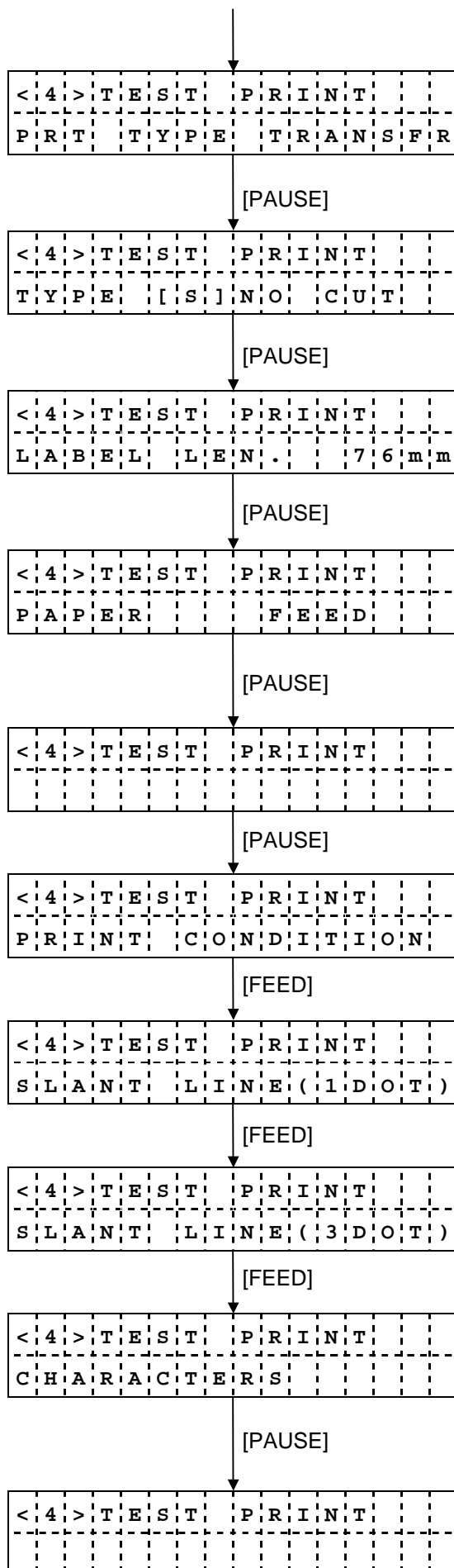
6.5 TEST PRINT

6.5.1 Test Print Operation Example

(1) Normal test print



- (1) Power off state
- (2) While holding the [FEED] and [PAUSE] keys down, turn the power on.
- (3) The self-test menu is displayed.
- (4) Press the [FEED] key.
- (5) System mode menu display (Parameter setting)
- (6) Press the [FEED] key.
- (7) System mode menu display (Fine adjustment value setting)
- (8) Press the [FEED] key.
- (9) System mode menu display (Test print)
- (10) Press the [PAUSE] key.
- (11) Test print condition setting mode
- (12) Press the [PAUSE] key.
- (13) Issue count setting mode:
Set the issue count using the [FEED] and [RESTART] keys.
- (14) Press the [PAUSE] key.
- (15) Print speed setting mode:
Select the print speed using the [FEED] and [RESTART] keys.
- (16) Press the [PAUSE] key.
- (17) Sensor selection mode:
Select the sensor using the [FEED] and [RESTART] keys.
- (18) Press the [PAUSE] key.



- (19) Print type setting mode:
Select the print type using the [FEED] and [RESTART] keys.
- (20) Press the [PAUSE] key.
- (21) Issue type setting mode:
Select the issue type using the [FEED] and [RESTART] keys.
- (22) Press the [PAUSE] key.
- (23) Label size setting mode:
Set the label length using the [FEED] and [RESTART] keys.
- (24) Press the [PAUSE] key.
- (25) One label feed mode:
Set the 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 printout mode
- (32) Press the [FEED] key.
- (33) 3-dot slant line printout mode
- (34) Press the [FEED] key.
- (35) Character printout mode
- (36) Press the [PAUSE] key.
(One label is printed.)
- (37) System mode menu display
(Test print)

```

graph TD
    Start([Power OFF]) -- "[FEED] [PAUSE]" --> S1["< 1 > D I A G . . . . . V 1 . . 0 A"]
    S1 -- "[FEED]" --> S2["< 2 > P A R A M E T E R S E T"]
    S2 -- "[FEED]" --> S3["< 3 > A D J U S T S E T"]
    S3 -- "[FEED]" --> S4["< 4 > T E S T P R I N T"]
    S4 -- "[PAUSE]" --> S5["< 4 > T E S T P R I N T  
P R I N T C O N D I T I O N"]
    S5 -- "[RESTART]" --> S6["< 4 > T E S T P R I N T  
A U T O P R I N T ( R E F L )"]
    S6 -- "[PAUSE]" --> S7["< 4 > T E S T P R I N T  
A U T O P R I N T ( R E F L )"]
    S7 -- "[PAUSE]" --> S8["< 4 > T E S T P R I N T"]
    S8 -- "[PAUSE]" --> End([ ])

```

[FEED] [PAUSE]

< 1 > D I A G .	V 1 . 0 A
-----------------	-----------

[FEED]

< 2 > P A R A M E T E R S E T

[FEED]

< 3 >	A	D	J	U	S	T	S	E	T	
-------	---	---	---	---	---	---	---	---	---	--

[FEED]

<	4	>	T	E	S	T	P	R	I	N	T
---	---	---	---	---	---	---	---	---	---	---	---

[PAUSE]

<	4	>	T	E	S	T	P	R	I	N	T					
P	R	I	N	T	C	O	N	D	I	T	I	O	N			

[RESTART]

[illegible]

```
A|U|T|O| |P|R|I|N|T|( |R|E|F|L|)
```

[PAUSE]

< 4 > T E S T P R I N T
A U T O P R I N T (R E F L)

A|U|T|O| |P|R|I|N|T|(|R|E|F|L|)

[PAUSE]

<	4	>	T	E	S	T	P	R	I	N	T
---	---	---	---	---	---	---	---	---	---	---	---

[PAUSE]

- (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 printout
mode (Reflective sensor)
- (14) Press the [PAUSE] key.
[One label is fed.
3-dot slant line: 5 labels are printed.]
- (15) Assembly process automatic printout
mode (Reflective sensor)
- (16) Press the [PAUSE] key.
(Bar code: 5 labels are printed.)
- (17) System mode menu display
(Test print)
- (18) Press the [PAUSE] key.

- (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 printout mode (Reflective sensor)

(14) Press the [PAUSE] key.

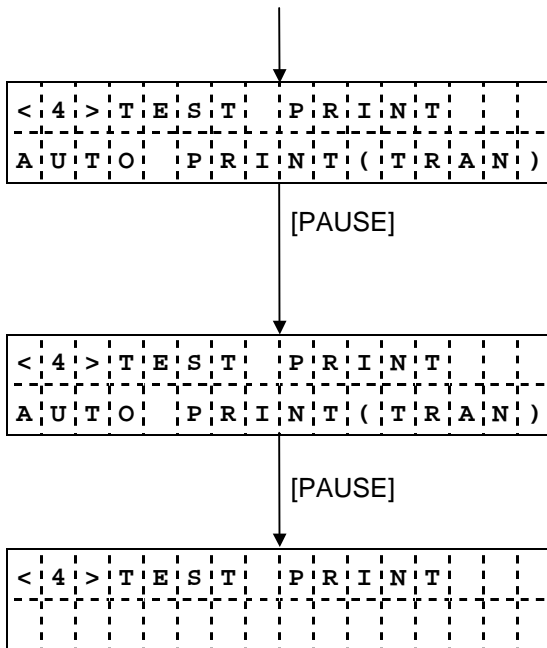
One label is fed.
3-dot slant line: 5 labels are printed.

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

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

(17) System mode menu display
(Test print)

(18) Press the [PAUSE] key.



(19) Assembly process automatic printout mode (Transmissive sensor)

(20) Press the [PAUSE] key.

[One label is fed.
3-dot slant line: 5 labels are printed.]

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

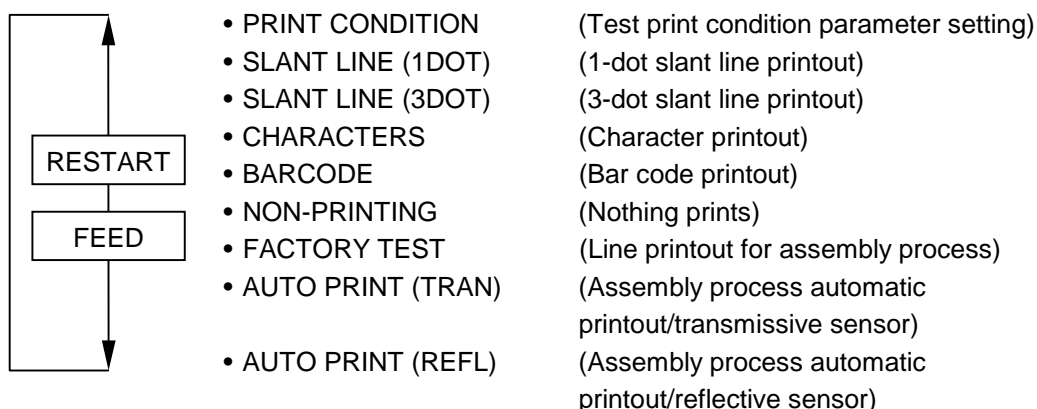
(22) Press the [PAUSE] key.

(Bar code: 5 labels are printed.)

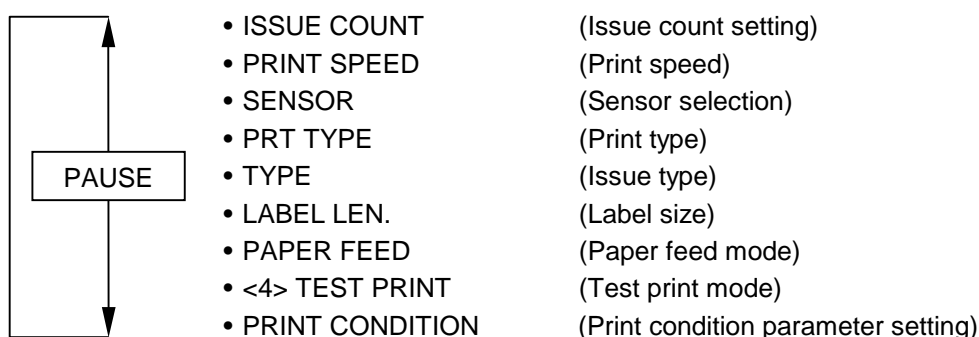
(23) System mode menu display
(Test print)

6.5.2 Setting Contents

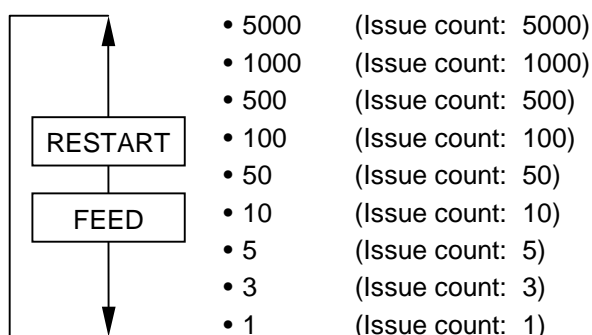
(1) Test print mode selection



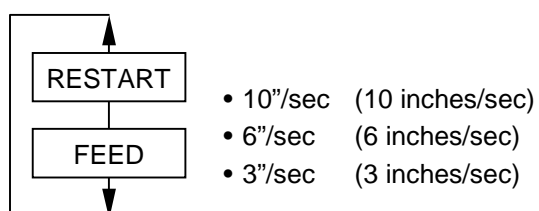
(2) Test print condition parameter setting (PRINT CONDITION)



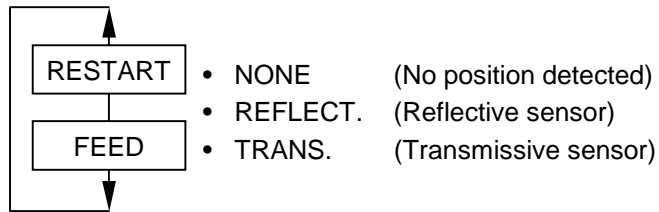
(3) Issue count setting (ISSUE COUNT)



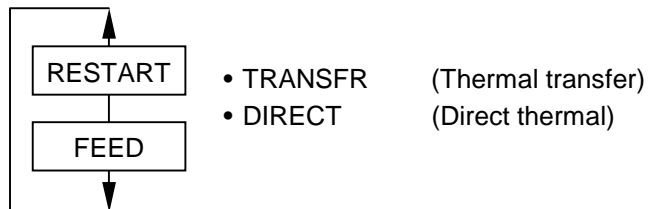
(4) Print speed (PRINT SPEED)



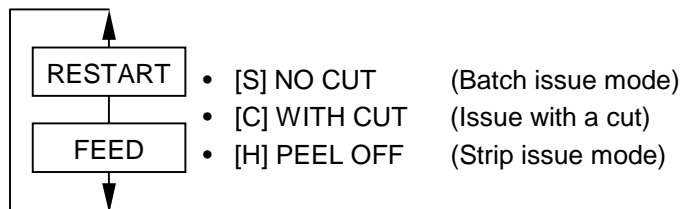
(5) Sensor selection (SENSOR)



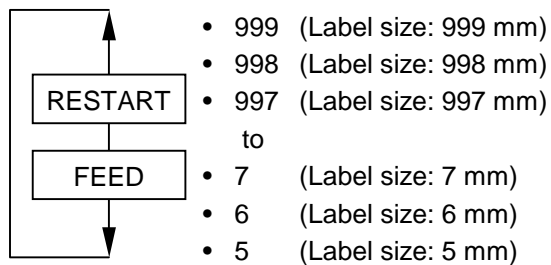
(6) Print type (PRT TYPE)



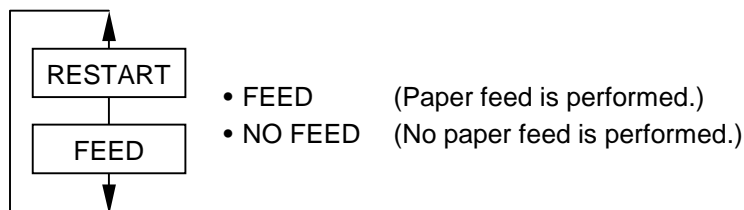
(7) Issue type (TYPE)



(8) Label size (LABEL LEN.)



(9) Paper feed (PAPER)



(10) Initial parameter values when turning the power on

- Menu selection: Test print condition parameter setting
- Issue count setting (ISSUE COUNT): 1
- Print speed (PRINT SPEED): 6"/sec
- Sensor selection (SENSOR): Transmissive sensor
- Print type (PRT TYPE): Thermal transfer print mode
- Issue type (TYPE): Batch issue
- Label size (LABEL LEN.): 76 mm
- Paper feed (PAPER): Paper feed is performed.

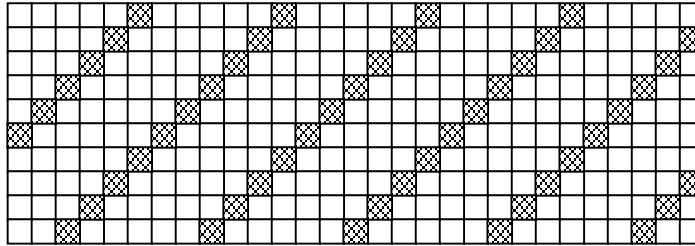
(11) Supplementary explanation

- 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 set or the menu is selected, the printer enters repeat mode, in which the key is entered repeatedly.
- Each fine adjustment parameter is effective for test print. However, the X-coordinate fine adjustment is excluded.
- When an error occurs during a test print, the error message is displayed and printing is stopped. 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. Such a parameter is retained until the power is turned off.
- The label size greater than the image buffer length cannot be designated. If it is designated, the printer prints in 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. The parameter setting and 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 for each operation
 - Print speed: 6"/sec
 - Sensor designation: Reflective or transmissive sensor
 - Print type: Thermal transfer print mode
 - Issue mode: Batch issue
 - Label size: 76 mm
 - Print density fine adjustment value: ± 0
- When the transmissive sensor is selected, the gap between labels should be 3 mm.

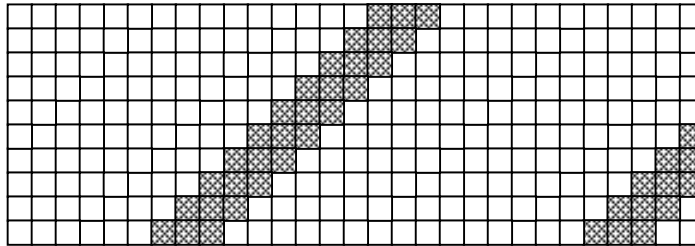
- For SP 40 II, the print speed “10 ips” is not supported for printing with the rotary cutter. If “10 ips” is specified when the rotary cutter has been installed, the print speed is corrected from 10 ips to 6 ips, regardless of the cut designation.
For SP 40 II, if less than 15.0 mm and 30.0 mm of the label pitch is specified for printing at 3 ips and 6 ips, respectively, an issue without a cut is performed.

- Magnification of slant lines is as follows:

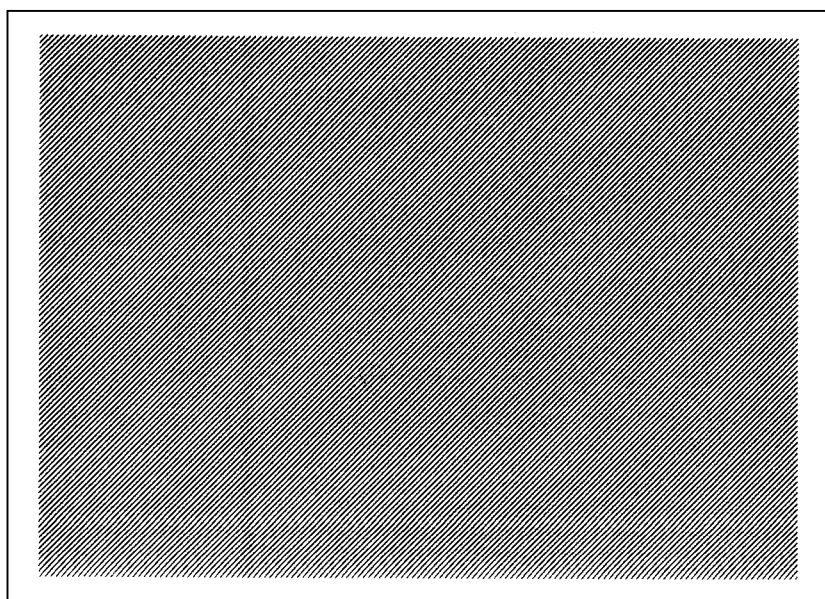
1-dot slant line (Black area ratio: 16.7%)



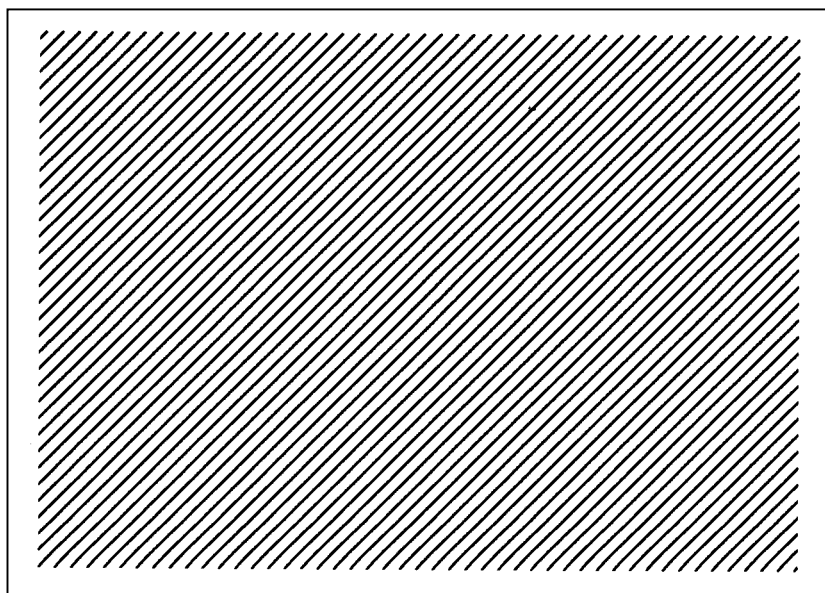
3-dot slant line (Black area ratio: 16.7%)



6.5.3 Test Print Samples



1-dot slant line printout



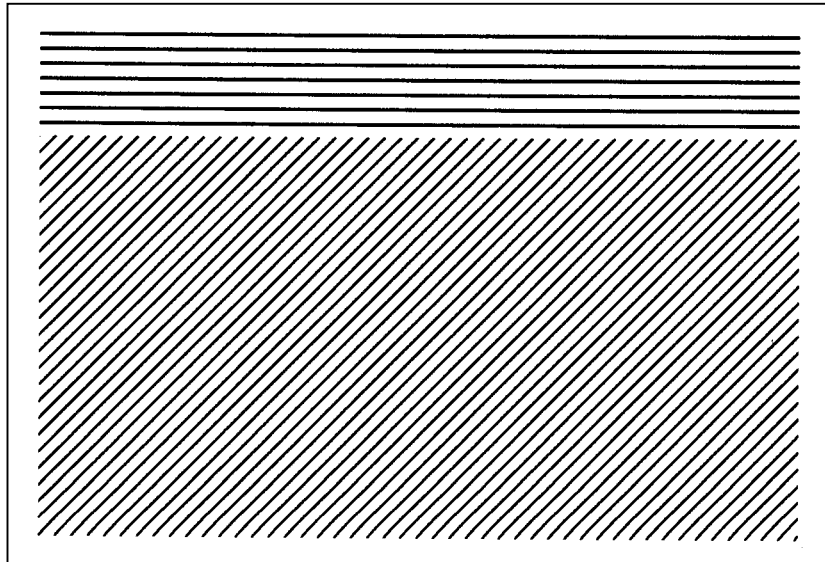
3-dot slant line printout



Character printout



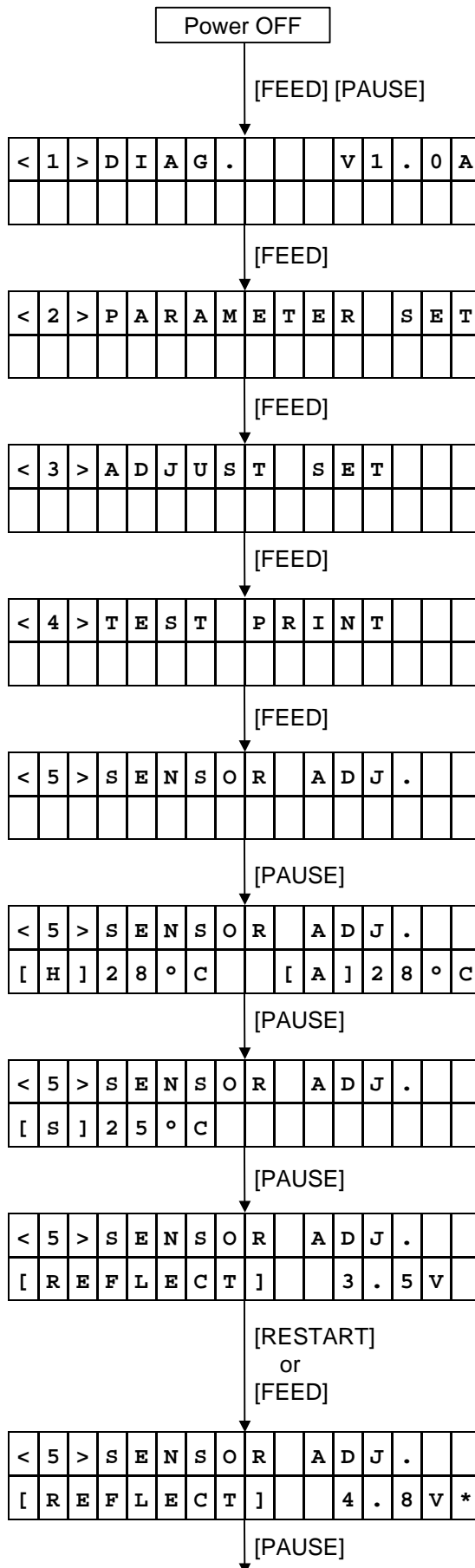
Bar code printout



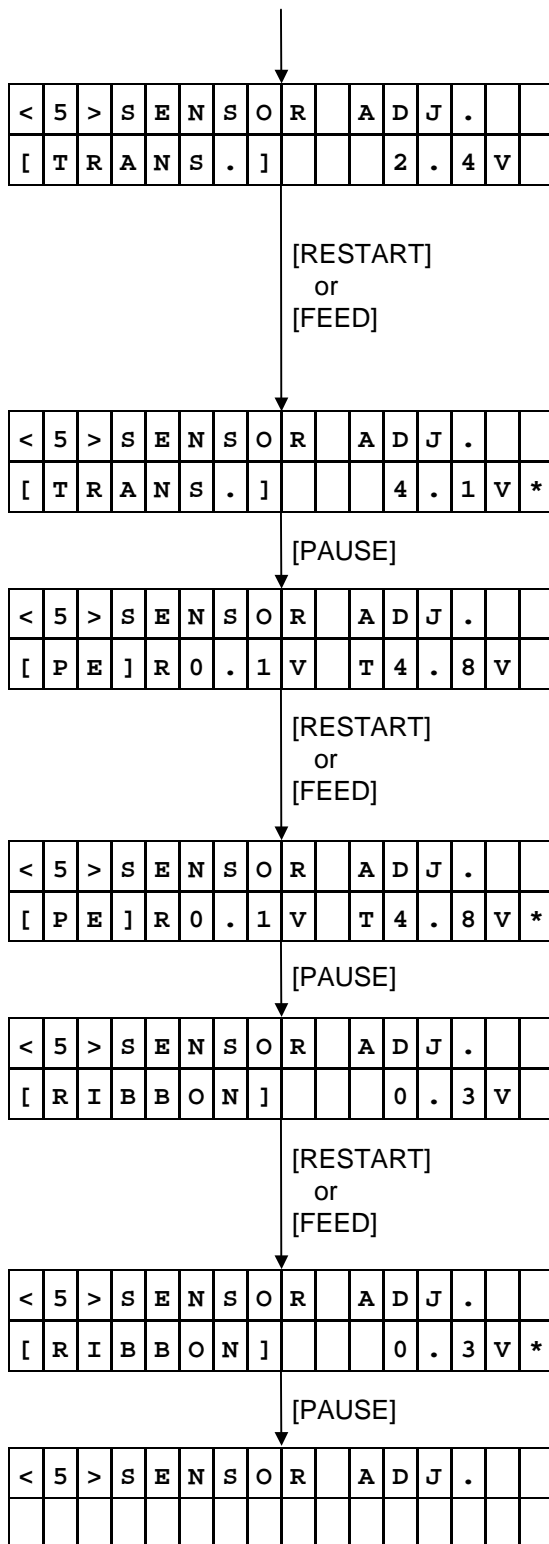
Line printout for the assembly process

6.6 SENSOR DISPLAY/ADJUSTMENT

6.6.1 Sensor Display/Adjustment Operation Example



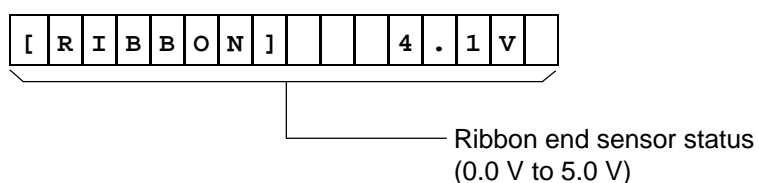
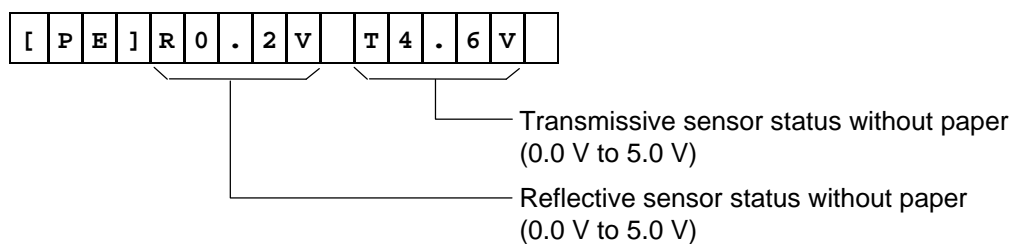
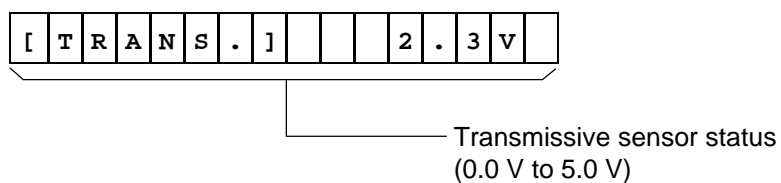
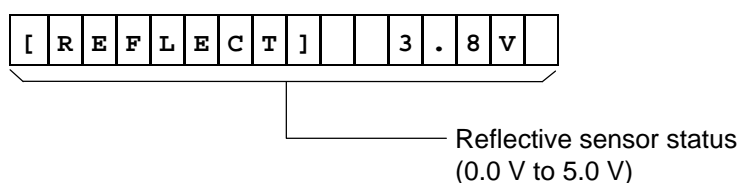
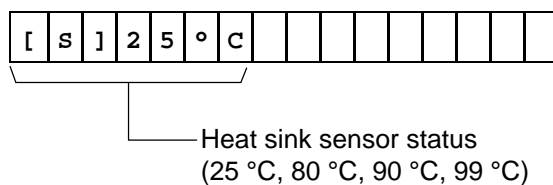
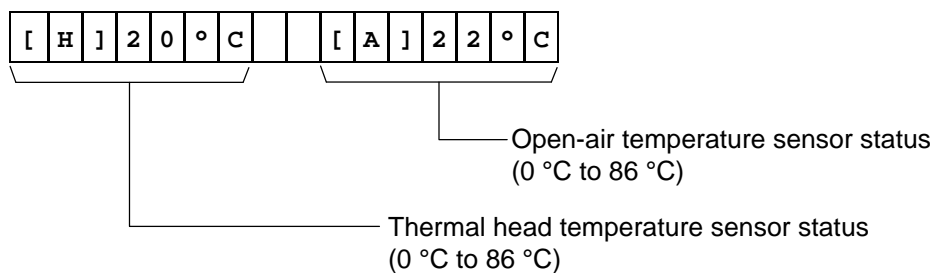
- (1) Power off state
- (2) While holding the [FEED] and [PAUSE] keys down, turn the power on.
- (3) The self-test menu is displayed.
- (4) Press the [FEED] key.
- (5) System mode menu display (Parameter setting)
- (6) Press the [FEED] key.
- (7) System mode menu display (Fine adjustment value setting)
- (8) Press the [FEED] key.
- (9) System mode menu display (Test print)
- (10) Press the [FEED] key.
- (11) System mode menu display (Sensor display/adjustment)
- (12) Press the [PAUSE] key.
- (13) Thermal head temperature/open-air temperature display
- (14) Press the [PAUSE] key.
- (15) Heat sink temperature display
- (16) Press the [PAUSE] key.
- (17) Reflective sensor adjustment value display:
Load tag paper. (The black mark should not cover the sensor.)
- (18) Hold down the [RESTART] or [FEED] key for 3 seconds or more.
- (19) "*" is displayed when the reflective sensor adjustment is complete.
- (20) Press the [PAUSE] key.



- (21) Transmissive sensor adjustment value display:
Remove the label from the label paper and load the backing paper. (The label should not cover the sensor.)
- (22) Hold down the [RESTART] or [FEED] key for 3 seconds or more.
- (23) “*” is displayed when the transmissive sensor adjustment is complete.
- (24) Press the [PAUSE] key.
- (25) Reflective/transmissive sensor adjustment value display (without paper):
Remove any paper covering the sensor.
- (26) Hold down the [RESTART] or [FEED] key for 3 seconds or more.
- (27) “*” is displayed when the reflective/transmissive sensor adjustment is complete.
- (28) Press the [PAUSE] key.
- (29) Ribbon end sensor adjustment value display:
Set the ribbon part so that it covers the sensor.
- (30) Hold down the [RESTART] or [FEED] key for 3 seconds or more.
- (31) “*” is displayed when the ribbon end sensor adjustment is complete.
- (32) Press the [PAUSE] key.
- (33) System mode menu display
(Sensor display/adjustment)

6.6.2 Display Contents

(1) Sensor adjustment value display

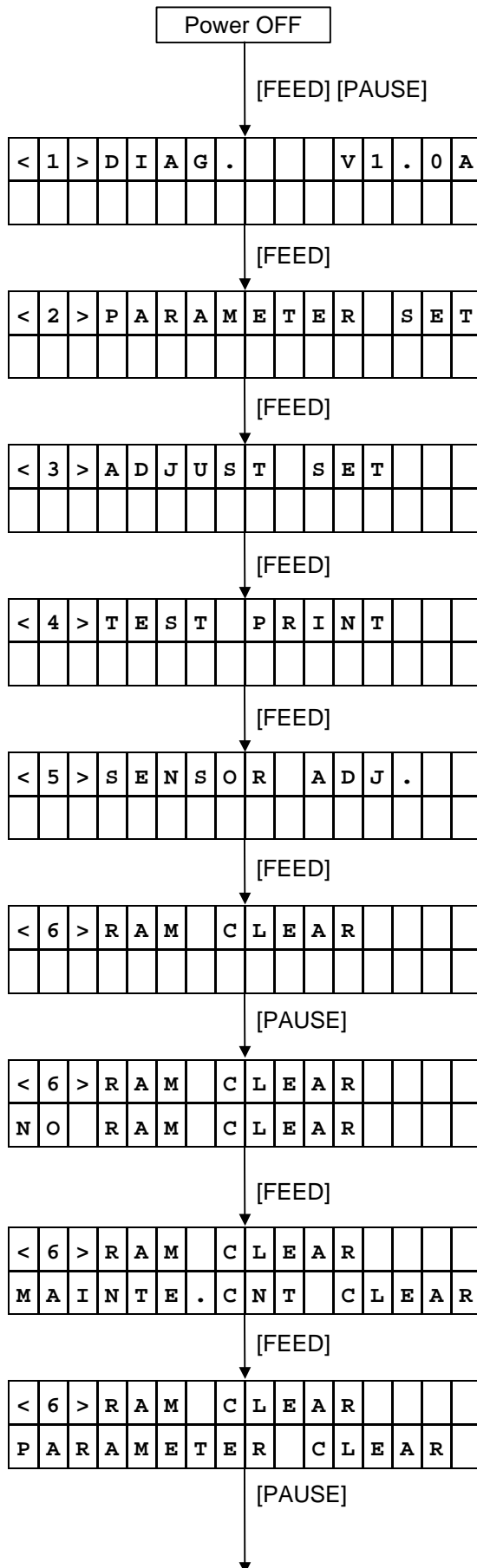


(2) Supplementary explanation

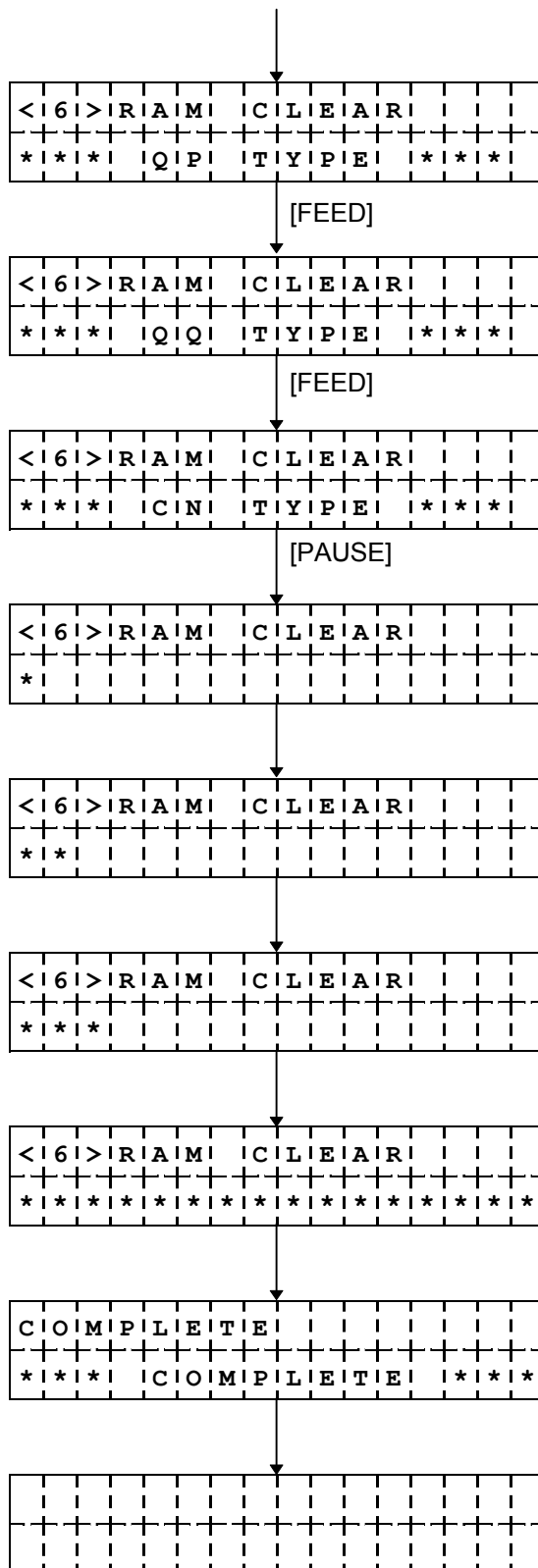
- During the sensor check, each sensor status is monitored and displayed every 200 msec. (When the sensor status is changed, the display also changes.)
- When the [FEED] and [RESTART] keys are entered at the same time, the system mode menu is displayed.

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
(*) 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 QP type

(22) Press the [FEED] key.

(23) RAM clear for the QQ type.

(24) Press the [FEED] key.

(25) RAM clear for the CN type.

(26) Press the [PAUSE] key.

(27) Parameter clear is executed.

Select the type
according to
the destination.

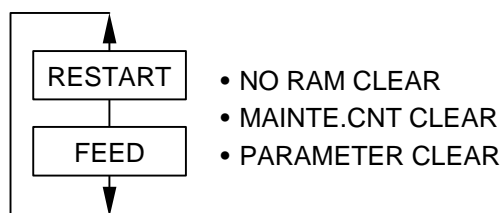
(28) Progress display

(29) Parameter clear is complete.

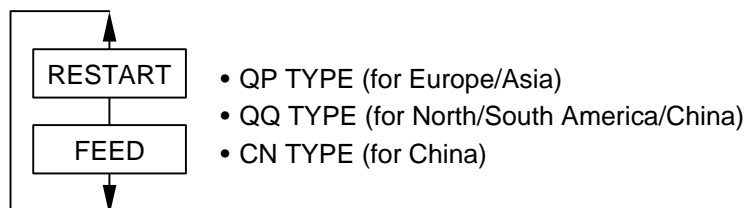
(30) Turn the power off.

6.7.2 RAM Clear Contents

(1) RAM clear mode



(2) Selection of destination type



(3) Supplementary explanation

- When the [FEED] and [RESTART] keys are pressed at the same time, the display shows the system mode menu.
- When “COMPLETE” is displayed after RAM clear is complete, be sure to turn off the power.
- The total label distance covered, sensor adjustment values (system mode <5>), the IP address setting, languages for LCD messages, and data of flash memory card and ATA card are not cleared by RAM clear.

NOTE: The destination for which RAM clear has been performed ([QQ], [QP], or [CN]) is printed on the top right-hand corner of the maintenance counter printout.

(4) Initial values after maintenance counter clear

Item	Initial Value
Label distance covered	0 km
Print distance	0 km
Cut count	0
Head up/down count	0
Ribbon motor drive time	0 hour
Head-up solenoid drive time	0 hour
RS-232C hardware error count	0
System error count	0
Momentary power interruption count	0

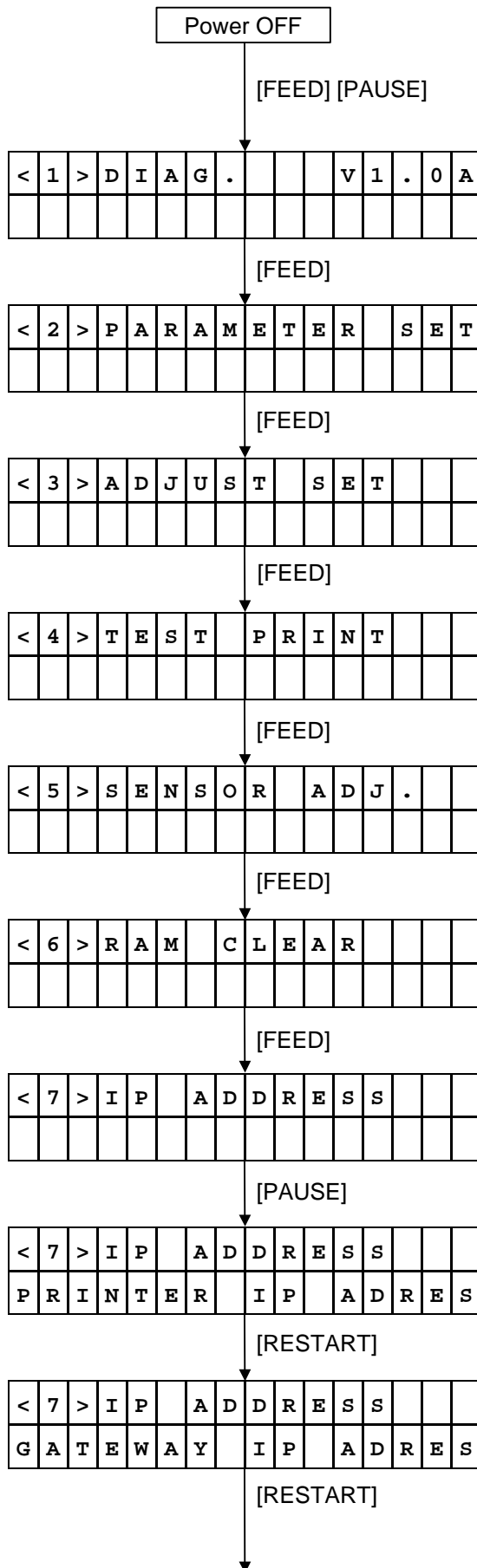
(5) Initial values after parameter clear

Parameter		Initial Value
Feed fine adjustment (PC)		0 mm
Cut position (or strip position) fine adjustment (PC)		0 mm
Back feed fine adjustment (PC)		0 mm
Print density fine adjustment: Thermal transfer print mode (PC)		0
Print density fine adjustment: Direct thermal print mode (PC)		0
Ribbon motor drive voltage fine adjustment (Rewind) (PC)		0
Ribbon motor drive voltage fine adjustment (Back tension) (PC)		0
Feed fine adjustment (Key)		0 mm
Cut position (or strip position) fine adjustment (Key)		0 mm
Back feed fine adjustment (Key)		0 mm
Print density fine adjustment: Thermal transfer print mode (Key)		0
Print density fine adjustment: Direct thermal print mode (Key)		0
Ribbon motor drive voltage fine adjustment (Rewind) (Key)		0
Ribbon motor drive voltage fine adjustment (Back tension) (Key)		0
X-coordinate fine adjustment (Key)		0 mm
Transmissive sensor manual threshold fine adjustment value		1.4 V
Reflective sensor manual threshold fine adjustment value		1.0 V
Character code selection		PC-850
Font "0" selection		"0" (without slash mark)
Communication speed		9600 bps
Data length	QP type	8 bits
	QQ type	7 bits
	CN type	8 bits
Stop bit length		1 bit
Parity	QP type	NONE
	QQ type	EVEN
	CN type	NONE
Transmission control	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
	CN type	XON/XOFF + READY/BUSY (DTR) protocol: (XON output when the power is on, XOFF output when the power is off)

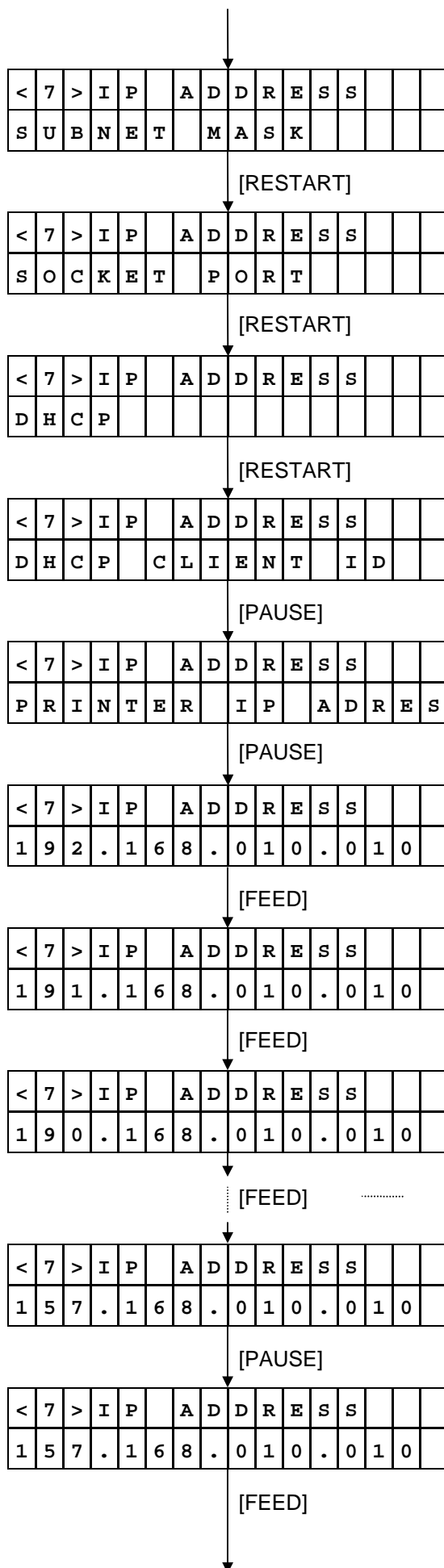
Parameter		Initial Value
Language for LCD messages	QP type	English
	QQ type	English
	CN type	English
Forward feed standby after an issue		OFF
Head-up operation in cut issue mode, or use of the rewinder		OFF (Head-up operation is not operated/ the rewinder is not used.)
Installed solenoid type		TYPE 2 (Stronger pull force type)
Ribbon saving system		OFF
Control code type		Auto
Peel-off wait status selection		OFF
[FEED] key function		FEED (One label is fed.)
Kanji code		TYPE1
Euro code		B0H
Automatic head broken dots check		OFF
Centronics ACK/BUSY timing		TYPE1
Web printer function		OFF
Reset process when the nlnit signal is ON		ON
Ribbon near end detection setting		OFF
Expansion I/O operation mode		TYPE1
Centronics operation mode		SPP
Plug-and-play operation mode		OFF
Label end/ribbon end process setting		TYPE1
Pre-peel-off process setting		OFF
Back feed speed setting		3 ips
Status response		ON
Label pitch		76.2 mm
Effective print length		74.2 mm
Effective print width		104.0 mm
Print type		Thermal transfer print mode
Sensor type		Transmissive sensor
Feed speed		6"/sec.
Issue mode		Batch
PC-save automatic call		ON Save No. on the CPU board (ID) 01
BASIC interpreter setting		OFF
BASIC interpreter trace setting		OFF
DHCP setting		OFF

6.8 IP ADDRESS SETTING

6.8.1 IP Address Setting Operation Example



- (1) Power off state
- (2) While holding the [FEED] and [PAUSE] keys down, turn the power on.
- (3) The self-test menu is displayed.
- (4) Press the [FEED] key.
- (5) System mode menu display (Parameter setting)
- (6) Press the [FEED] key.
- (7) System mode menu display (Fine adjustment value setting)
- (8) Press the [FEED] key.
- (9) System mode menu display (Test print)
- (10) Press the [FEED] key.
- (11) System mode menu display (Sensor display/adjustment)
- (12) Press the [FEED] key.
- (13) System mode menu display (RAM clear)
- (14) Press the [FEED] key.
- (15) System mode menu display (IP address setting)
- (16) Press the [PAUSE] key.
- (17) Printer IP address setting mode
- (18) Press the [RESTART] key.
- (19) Gateway IP address setting mode
- (20) Press the [RESTART] key.



(21) Subnet mask setting mode

(22) Press the [RESTART] key.

(23) Socket port number setting mode

(24) Press the [RESTART] key.

(25) DHCP function setting mode

(26) Press the [RESTART] 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

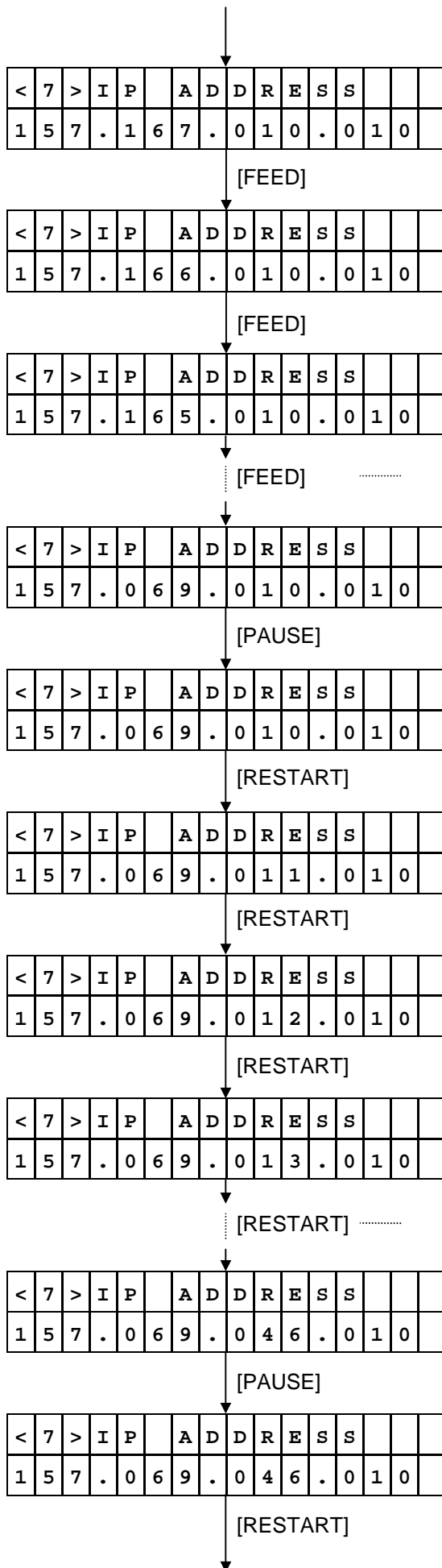
(36) Press the [FEED] key.

(37) Setting for the first 8 bits

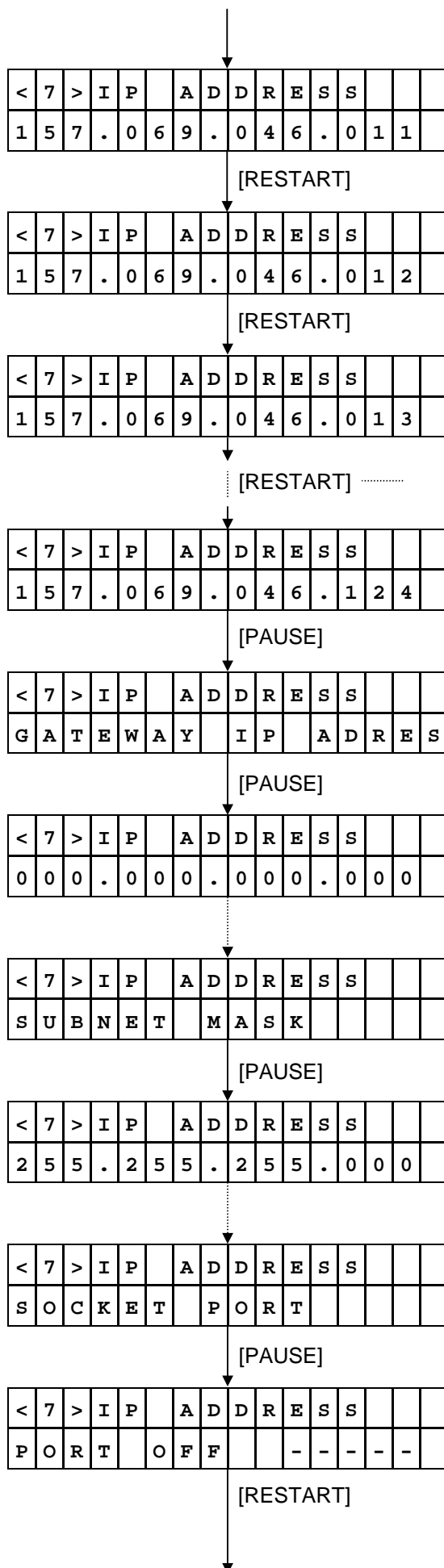
(38) Press the [PAUSE] key.

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

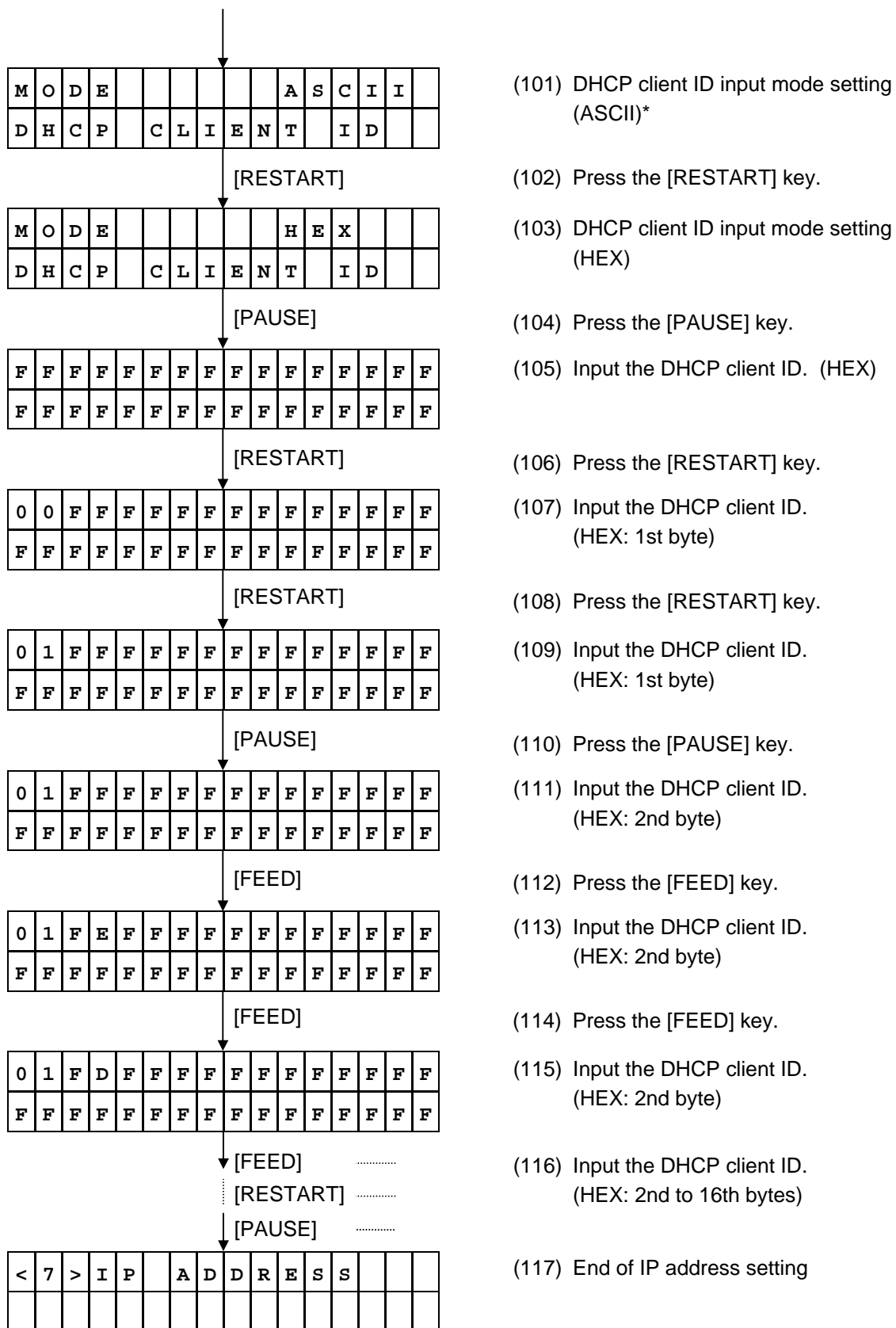
(40) Press the [FEED] key.



- (41) Setting for the next 8 bits
- (42) Press the [FEED] key.
- (43) Setting for the next 8 bits
- (44) Press the [FEED] 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.

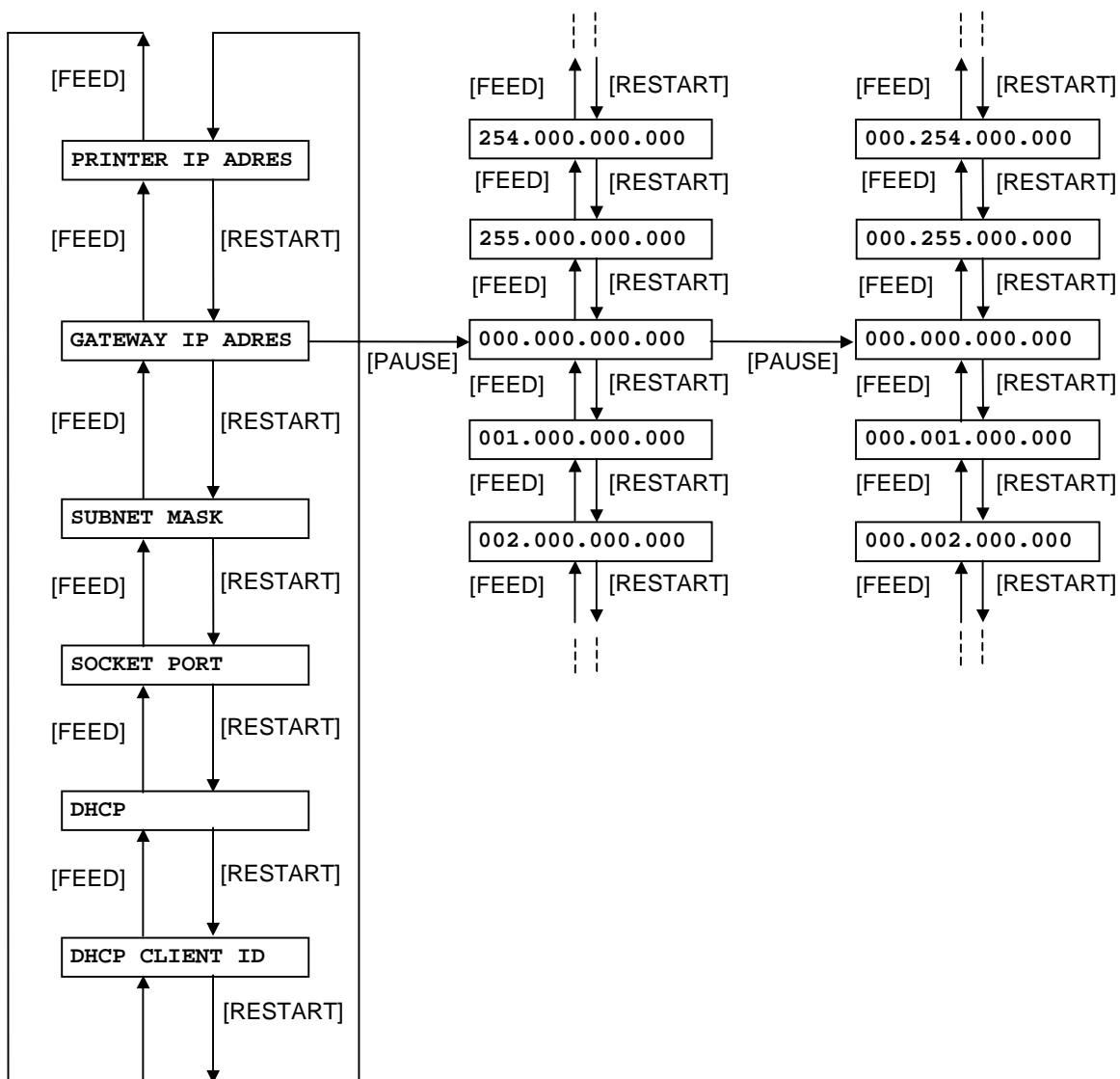


- (61) Setting for the next 8 bits
- (62) Press the [RESTART] key.
- (63) Setting for the next 8 bits
- (64) Press the [RESTART] key.
- (65) Setting for the next 8 bits
- (66) Press the [RESTART] key.
- (67) Setting for the next 8 bits
- (68) Press the [PAUSE] key.
- (69) Gateway IP address setting mode
- (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.



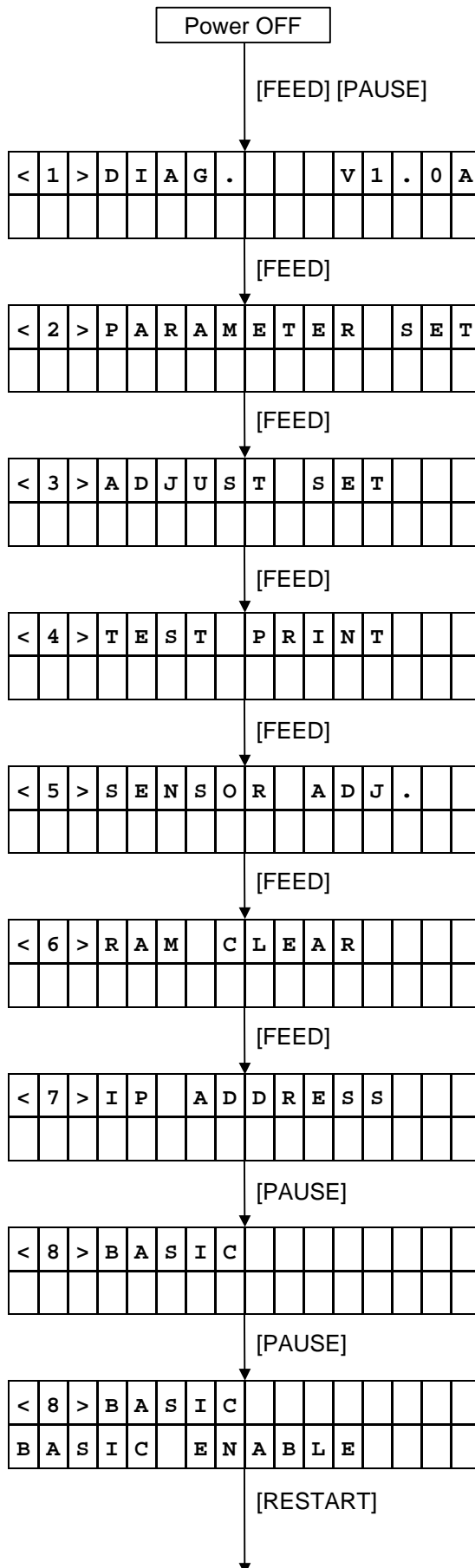
NOTE: When the DHCP client ID input mode is ASCII, data for each byte is displayed in ASCII characters.

6.8.2 Setting Contents

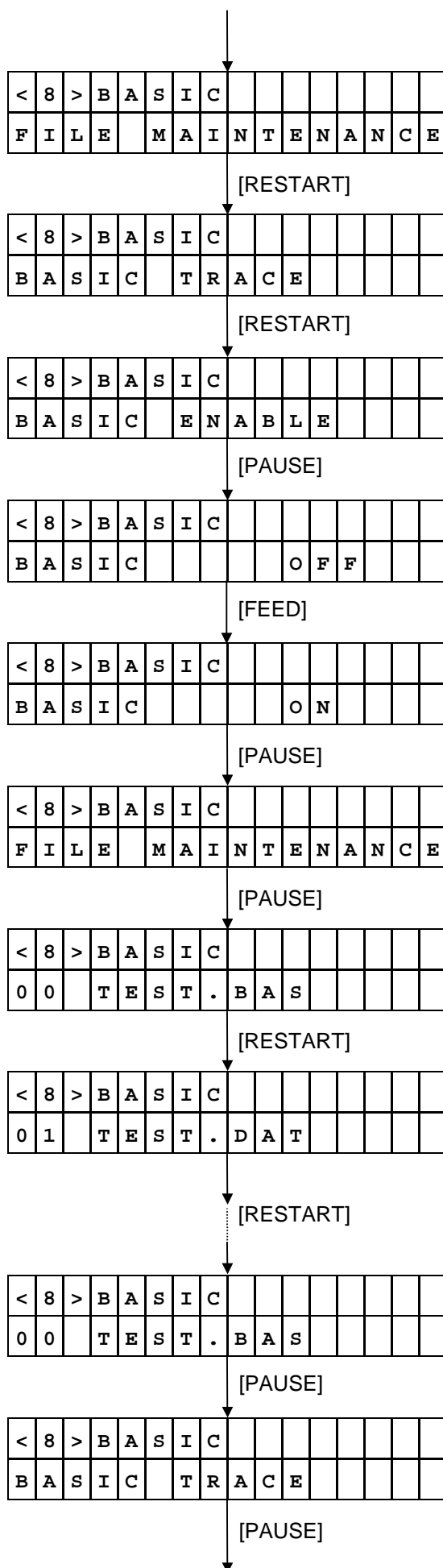


6.9 BASIC SETTING

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 [PAUSE] 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 enable setting mode

(26) Press the [PAUSE] key.

(27) BASIC is disabled.

(28) Press the [FEED] key.

(29) BASIC is enabled.

(30) Press the [PAUSE] key.

(31) BASIC file browser

(32) Press the [PAUSE] key.

(33) Program file display

(34) Press the [RESTART] key.

(35) Data file display


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

(37) Program file display

(38) Press the [PAUSE] key.

(39) BASIC trace setting

(40) Press the [PAUSE] key.



<	8	>	B	A	S	I	C								
T	R	A	C	E						O	F	F			

(41) BASIC trace setting (Disabled)

[FEED]



(42) Press the [FEED] key.

(43) BASIC trace setting (Enabled)

<	8	>	B	A	S	I	C								
T	R	A	C	E						O	N				

[PAUSE]

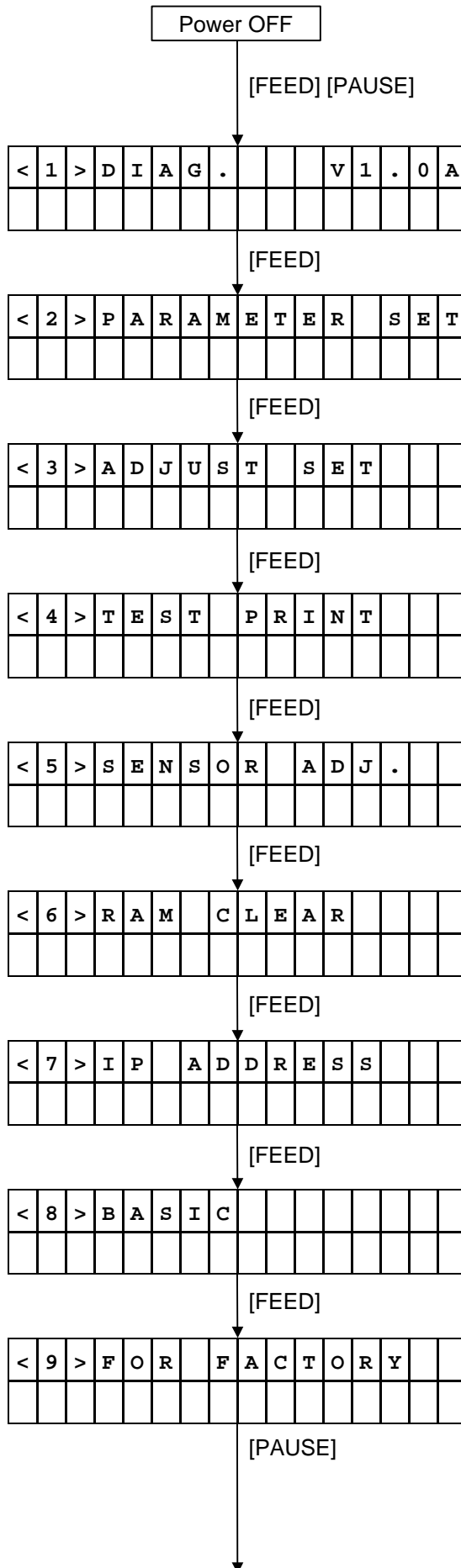


(44) Press the [PAUSE] key.

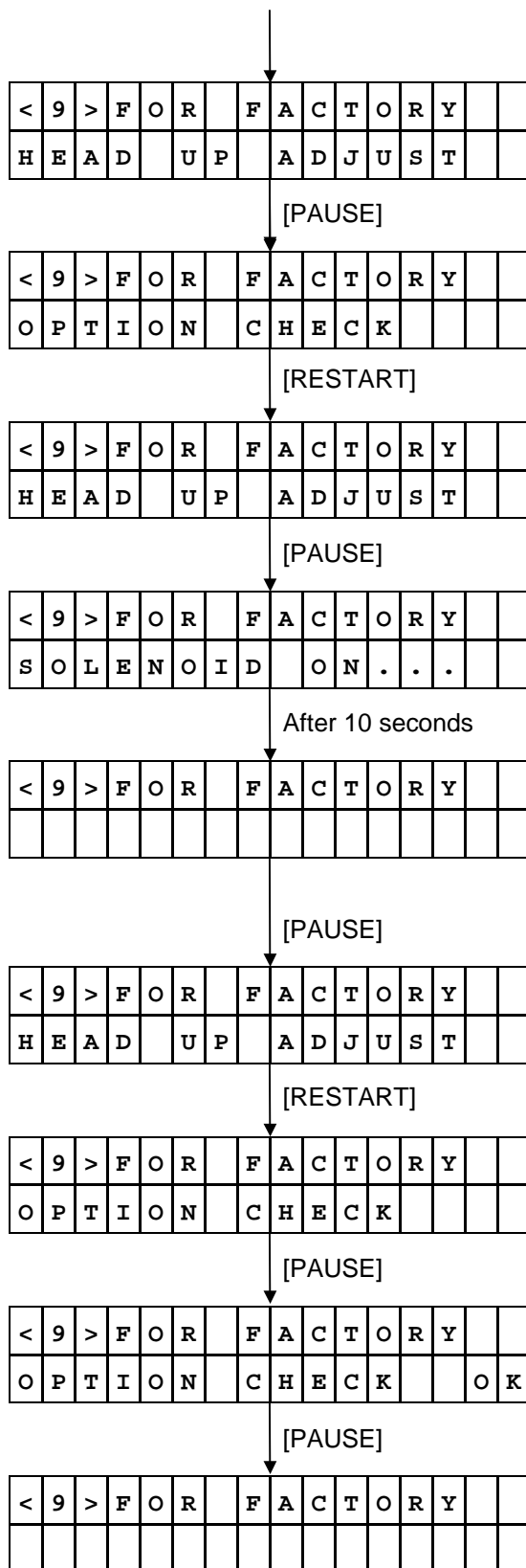
(45) BASIC setting mode

<	8	>	B	A	S	I	C								

6.10 ADJUSTMENT MODE FOR FACTORY



- (1) Power off state
- (2) While holding the [FEED] and [PAUSE] keys down, turn the power on.
- (3) The self-test menu is displayed.
- (4) Press the [FEED] key.
- (5) System mode menu display (Parameter setting)
- (6) Press the [FEED] key.
- (7) System mode menu display (Fine adjustment value setting)
- (8) Press the [FEED] key.
- (9) System mode menu display (Test print)
- (10) Press the [FEED] key.
- (11) System mode menu display (Sensor display/adjustment)
- (12) Press the [FEED] key.
- (13) System mode menu display (RAM clear)
- (14) Press the [FEED] key.
- (15) System mode menu display (IP address setting)
- (16) Press the [FEED] key.
- (17) System mode menu display (BASIC address)
- (18) Press the [FEED] key.
- (19) The menu for the adjustment mode for the factory is displayed.
- (20) Press the [PAUSE] key.



(21) Head-up adjustment mode display

(22) Press the [PAUSE] key.

(23) Option check mode display

(24) Press the [RESTART] key.

(25) Head-up adjustment mode display

(26) Press the [PAUSE] key.

(27) The left message is displayed, and the head-up solenoid is turned ON for 10 seconds.

(28) After 10 seconds, the solenoid is turned OFF, then the display is returned to the menu for the adjustment for the factory.

(29) Press the [PAUSE] key.

(30) Head-up adjustment mode display

(31) Press the [RESTART] key.

(32) Option check mode display

(33) Press the [PAUSE] key.

(34) Option check result display

(35) Press the [PAUSE] key.

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

NOTE: *Option Check Details*

By installing the tool for option check, the following connectors on the board are checked: the solenoid connector (CN11), the peeled-off paper sensor connector (CN20), rewinder overflow sensor connector (CN4), the rotary cutter detection connector (CN18).

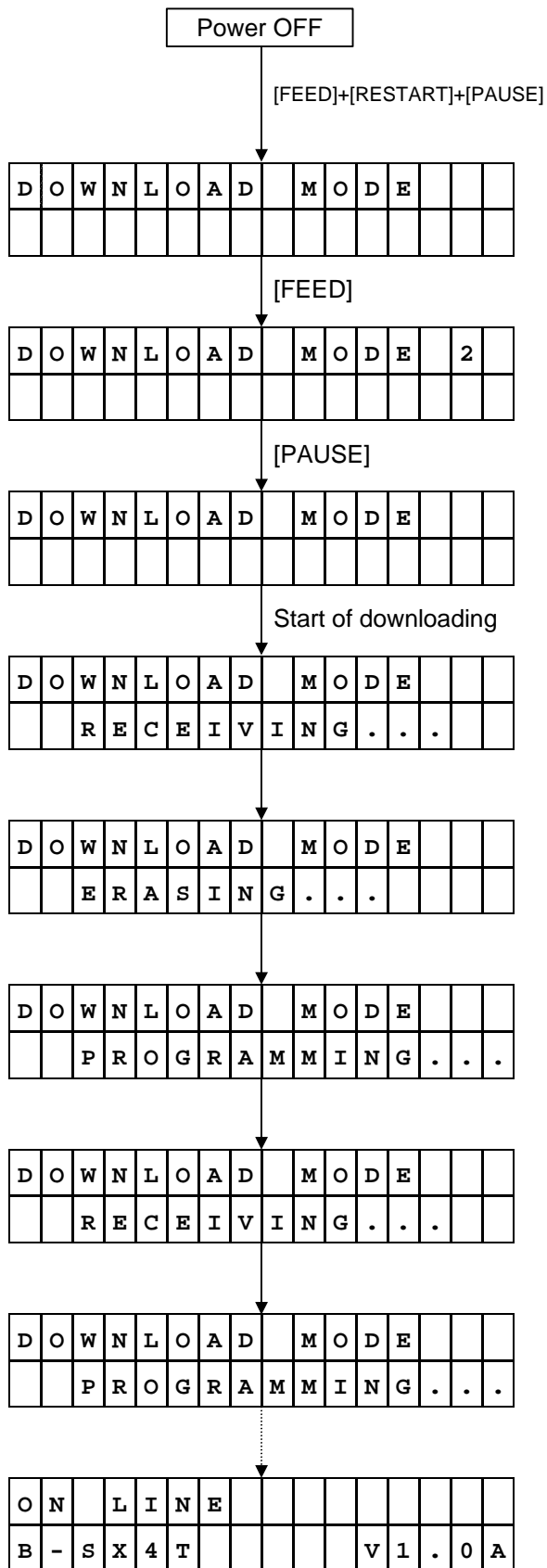
If the check results in a failure, then the failed item number is displayed on the LCD.

[Failed item numbers]

- 1: Solenoid connector (CN11)*
- 2: Peeled-off paper sensor connector (CN20)*
- 3: Rewinder overflow sensor connector (CN4)*
- 4: Rotary cutter detection connector (CN18)*

** When the check is performed, all connectors of the tool for the option check must be connected. A connector which is also used for supplying the power is included. If all connectors are not connected, the check is not properly performed. Several failed item numbers may be displayed.*

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) The download mode display
- (8) The download command is sent.
- (9) The message indicating the data is being received, is displayed.
- (10) The message indicating data in flash ROM is being erased, is displayed.
- (11) The message indicating the downloaded data is being written, is displayed.
- (12) The message indicating the data is being received, is displayed.
- (13) The message indicating the downloaded data is being written, is displayed.
- (14) After downloading is completed, the printer is automatically rebooted, then enters the online state.

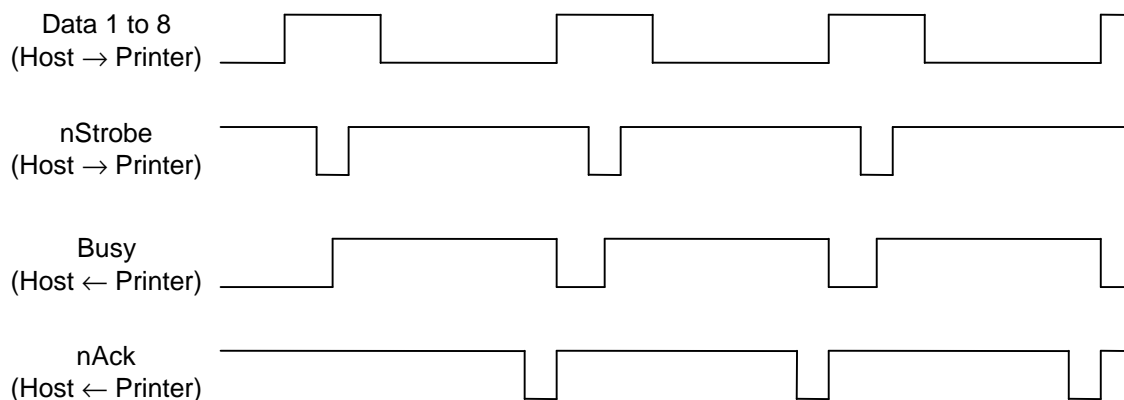
When the power is turned on while pressing the [FEED], [RESTART], and [PAUSE] keys at the same time, the printer enters the download mode.

In the download mode, only commands concerning downloading are available.

The printer keys can be used for selecting between "DOWNLOAD MODE" and "DOWNLOAD MODE 2". The timing for ACK-BUSY in Centronics differs between "DOWNLOAD MODE" and "DOWNLOAD MODE 2". When downloading is not performed properly in the "DOWNLOAD MODE", it may be performed properly if "DOWNLOAD MODE 2" is selected.

One of two types of the BUSY/ACK timing can be selected.

(1) DOWNLOAD MODE (Default)



(2) DOWNLOAD MODE 2

