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Software Developer's Manual

P-touch Template Command Reference

QL-720NW

Version 1.0

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Introduction

This material provides the necessary information for directly controlling the templates transferred to QL-720NW.

This information is provided assuming that the user has full understanding of the operating system being used and basic mastery of RS-232C in a developer's environment.

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Read the model names that appear in the screens in this manual as the name of your printer.

What is P-touch Template?

P-touch Template helps the user develop a printing system that connects directly from the host and has following functions:

● transfers the template data from P-touch Editor to the printer (2)

● transfers the ASCII text and binary data from a host to the template in the printer (3)

   ("Host" includes medias such as barcode readers, scales or medical devices.)

● prints the transferred data (3)

   (See the figure shown below.)
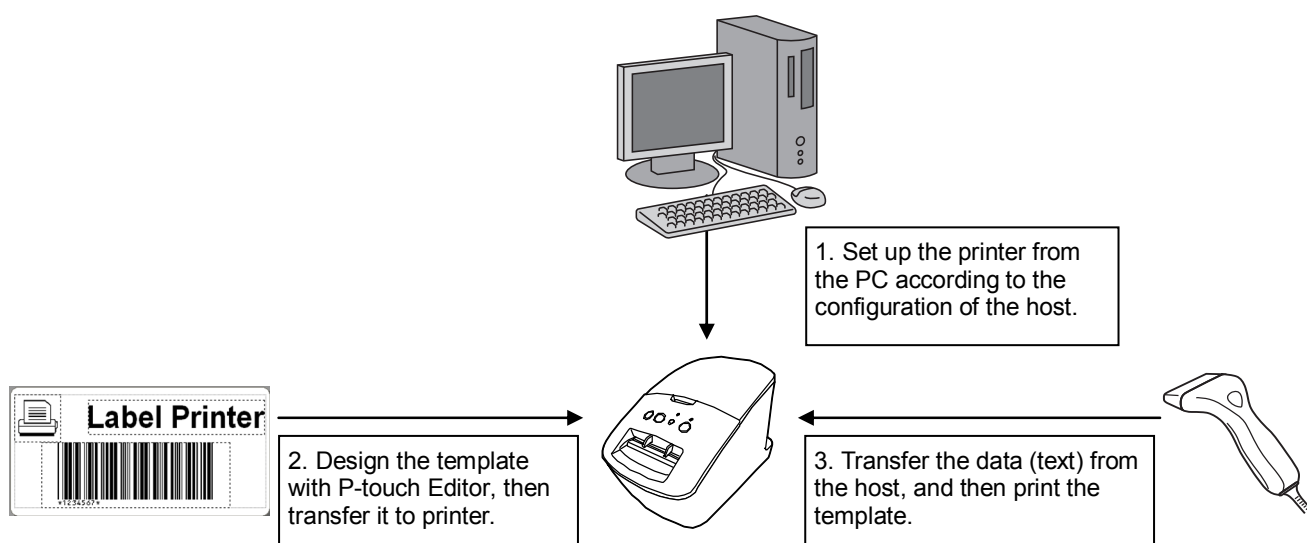
P-touch Template commands consist of a prefix character and a two-character text string.

When the prefix character is sent, the printer begins the analysis of the P-touch Template command, and performs the specified process if the following two-character text string corresponds to a command.

Note

*P-touch Template is not compatible with some hosts.

*These hosts should have a serial cable (RS-232C) to transfer the data.

1. Using P-touch Template

(1) Specify the printer settings.

Using the P-touch Template Settings tool, specify the initial printer settings according to the host system environment or the host that the printer is connected to.

(Please refer to "2. P-touch Template Settings Tool User's Guide" on page 4.)

The printer driver must first be installed via a USB connection.
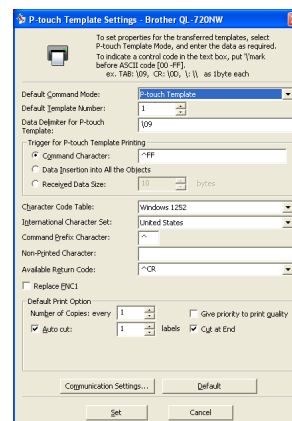
(2) Design the template.

Using P-touch Editor, design the template to be transferred to the printer.

(Please refer to "4. P-touch Template Limitations" on page 13.)
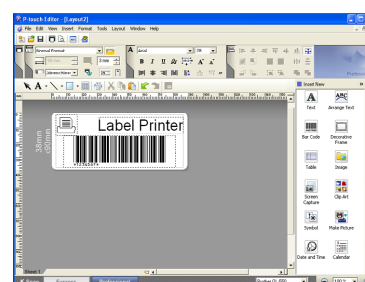
(3) Transfer the templates.

Using P-touch Transfer Manager, transfer the templates to the printer.

(Please refer to the QL series Software User's Guide.)
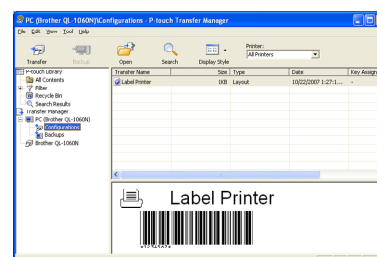
(4) Program using P-touch Template commands.

If any special commands are required to control the printer, change the host's program in accordance with the P-touch Template commands.

(Please refer to "6. Control Code Lists" on page 24.)
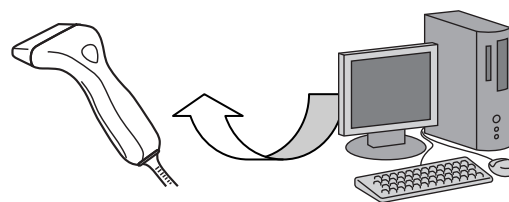
(5) Connect the printer with the host and print slips etc.

Using a serial cable, connect the printer to the host device. Transfer the data such as ASCII text from the host to templates in the printer, and print the label etc.

2. P-touch Template Settings Tool User's Guide

P-touch Template Settings - Brother QL-720NW

To set properties for the transferred templates, select P-touch Template Mode, and enter the data as required.
To indicate a control code in the text box, put '\'mark before ASCII code [00 -FF].
ex. TAB: \09, CR: \0D, \: \\ as 1byte each

Field	Value	Label
Default Command Mode:	P-touch Template	**(1) Command mode setting**
Default Template Number:	1	**(2) Template number setting**
Data Delimiter for P-touch Template:	\09	**(3) Delimiter setting**
Trigger for P-touch Template Printing		**(4) Print start trigger setting**
Command Character:	^FF	**(5) Print start command text string setting**
Data Insertion into All the Objects		
Received Data Size:	10 bytes	**(6) Print start data amount setting**
Character Code Table:	Windows 1252	**(7) Character code set setting**
International Character Set:	United States	**(8) International character set setting**
Command Prefix Character:	^	**(9) Prefix character setting**
Non-Printed Character:		**(10) Non-printed character setting**
Available Return Code:	^CR	**(11) Line feed character setting**
Replace FNC1		**(12) FNC1 replacement setting**

Default Print Option

- **(13) Number of copies setting**
- Number of Copies: every 1 — Give priority to print quality → **(14) Print quality setting**
- Auto cut: 1 labels — Cut at End → **(15) Cut at End setting**
- **(16) Cut number setting**
- **(17) Auto cut setting**
- **(18) Communication settings**

Communication Settings... | Default

Set | Cancel

Applies settings for (1) through (18) to the printer.

Closes the tool.

Returns (1) through (18) to their default settings.

(1) Command mode setting

- P-touch Template mode

   To use P-touch Template, select the P-touch Template mode.

- ESC/P mode

- Raster mode

(2) Template number setting

Specify the template number selected as the default when the printer is turned on.

However, if any template has been set to not be transferred to the printer, the number of that template cannot be specified.

(3) Delimiter setting

A delimiter is the symbol used to indicate when to move to the next object in the data that is being sent. Between 1 and 20 characters can be specified.

(4) Print start trigger setting

Select one of the following three options for the print start trigger.

- Command Character

  (Printing starts when the command character specified in (5) is received.)

- Data Insertion into All the Objects

  (Printing starts when the delimiter for the last object is received.)

- Received Data Size

  (Printing starts when the number of characters specified in (6) is received. However, delimiters are not counted in the number of characters.)

(5) Print start command text string setting

Specify 1 to 20 characters.

(6) Print start data amount setting

The amount of data that must be received before printing can begin can be set between 1 and 999.

(7) Character code set setting

Not available.

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(8) International character set setting

Select one of the following countries for the character set.

- USA
- France
- Germany
- Britain
- Denmark I
- Sweden
- Italy
- Spain I
- Japan
- Norway
- Denmark II
- Spain II
- Latin America
- South Korea
- Legal

The following 12 codes are switched depending on the country selected from those listed above.

23h 24h 40h 5Bh 5Ch 5Dh 5Eh 60h 7Bh 7Ch 7Dh 7Eh

For the characters that are switched, refer to the "International character set table" in "Appendix B: Character Code Tables".

(9) Prefix character setting

Change the prefix character code. Specify as a one-character character code.

The prefix character is the code for the first character that identifies commands that can be used in P-touch Template mode.

(10) Non-printed character setting

The characters specified here are not printed when data is received. Specify 1 to 20 characters.

(11) Line feed character setting

The line feed code is used when feeding data to indicate that the following data should be moved to the next line in a text object. One of the following four line feed codes can be selected, or 1 to 20 characters can be specified as the line feed code.

1. ^CR
2. \0D\0A
3. \0A
4. \0D

(12) FNC1 replacement setting

This setting selects whether or not GS codes, which are included in barcode protocols such as GS1-128 (UCC/EAN-128), are replaced with FNC1 codes.

If the check box is selected, a received GS code is replaced with the FNC1 code. If the check box is cleared, a received GS code is outputted as is.

(13) Number of copies setting

Specify the number of copies. A number between 1 and 99 can be specified.

(14) Print quality setting

Select the print quality setting. If the check box is selected, priority is given to the print quality.

If the check box is cleared, priority is given to the print speed.

(15) Cut at End setting

If this setting is selected, the cut operation will be performed when printing is finished.

(16) Cut number setting

A number between 1 and 99 can be specified.

(17) Auto cut setting

If auto cutting is selected, the cut operation will be performed after the number of labels specified in (16).

(18) Communication settings

Settings can be specified for the following parameters for serial communication.

Baud rate	115200 bps, 57600 bps, 38400 bps, 31250 bps, 28800 bps, 19200 bps, 14400 bps, 9600 bps, 4800 bps, 2400 bps, 1200 bps, 600 bps, 300 bps
Bit length (bits)	8 bits, 7 bits
Parity	None, Odd, Even
Busy control	DTR, XON/XOFF
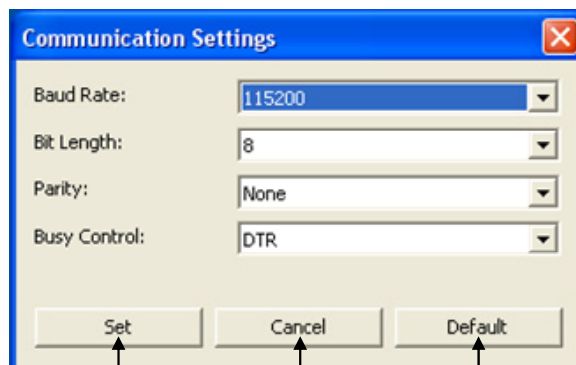
Applies the four settings to the printer. — Closes the Communication Settings dialog box. — Returns the four parameters to their default settings.

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Others

· **ini file**

  After the **[Set]** button (in the main dialog box or the Communications Settings dialog box) is clicked, the settings are saved when the dialog box is closed.

  C:\Documents and Settings\(user_account_name)\Application Data\Brother
  \Printer Settings\Pts3734.ini

· **Typing text into text boxes (3), (5), (9) and (10)**

  Characters that can be entered as text can be typed in, and control codes can be entered as ASCII codes (00 to FF) with \ in front of them.

  Example

PRINT	PRINT
Tab control code	\09
Line feed control code	\0D
\	\\

2. P-touch Template Settings Tool User's Guide

3. Examples for Using Commands

3.1 Example for using P-touch Template

Here is the label that will be made.

2.4 inches width continuous label is to be used.
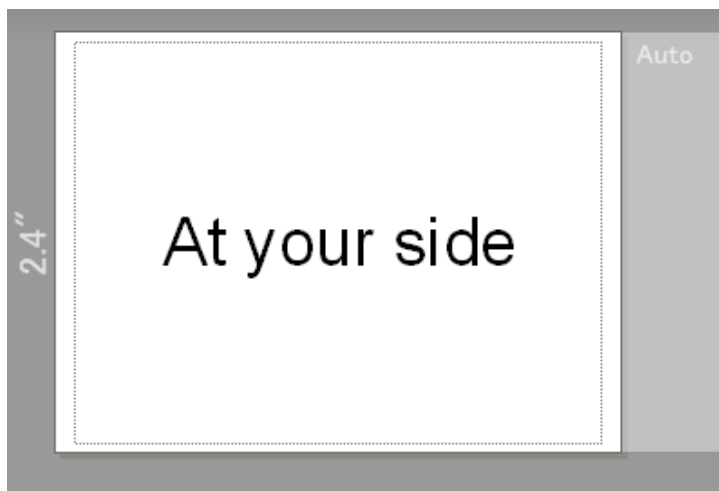
Steps

> 1. Make a template with P-touch Editor.
>
> 2. Transfer the template to Transfer Manager.
>
> 3. Transfer the template from Transfer Manager to the printer.
>
> 4. Use P-touch Template commands for printing.

Step 1: Make a template with P-touch Editor.

Start the P-touch Editor and make a label.
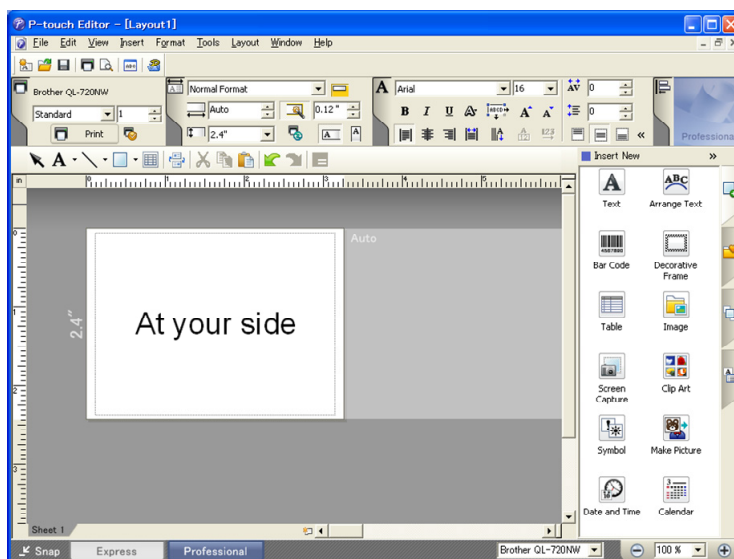
Step 2: Transfer the template to Transfer Manager.
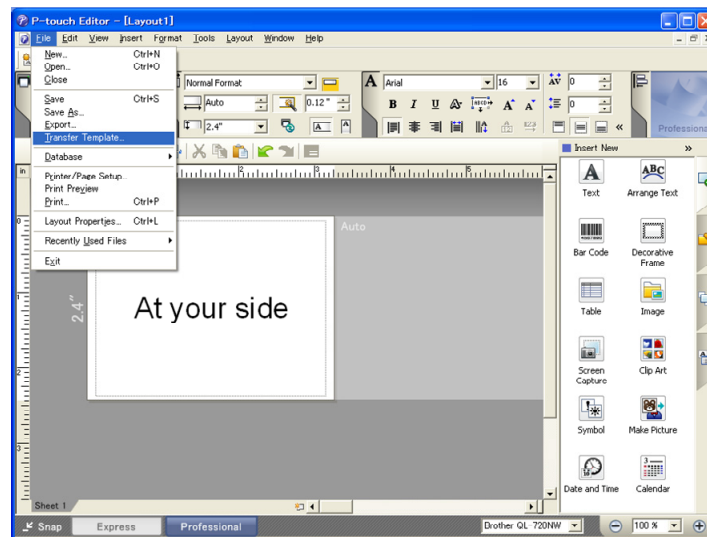
The template sent in step 2 is stored in Transfer Manager, as shown below.

Assigned number

At your side

Stored template

Step 3: Transfer the template from Transfer Manager to the printer.

Click **[Transfer]** button.

3. Examples for Using Commands
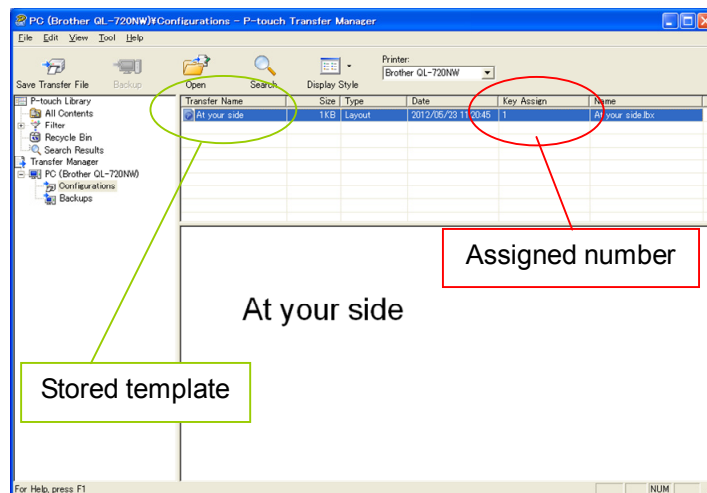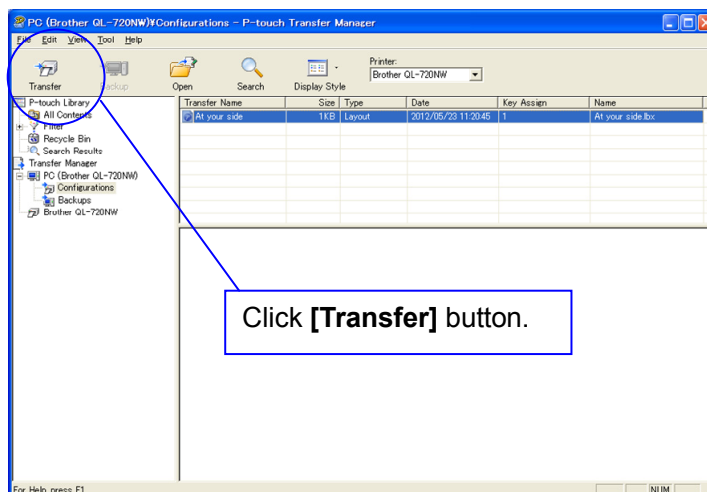
Note

Make sure that the printer is turned on and hooked up to the PC with a USB cable before using Transfer Manager. Also, make sure that the printer communication setting is always bidirectional communication when Transfer Manager is used.

When the template is transferred to the printer, the following message appears.
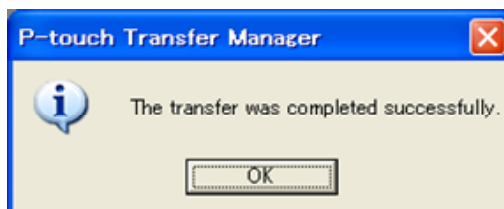
Step 4: Use P-touch Template commands for printing.

When using P-touch Template commands, at least these four commands are required.

However, two out of the four can be set by using the P-touch Template Settings tool.

(1) Select the P-touch Template mode.

(2) Choose the assigned number.
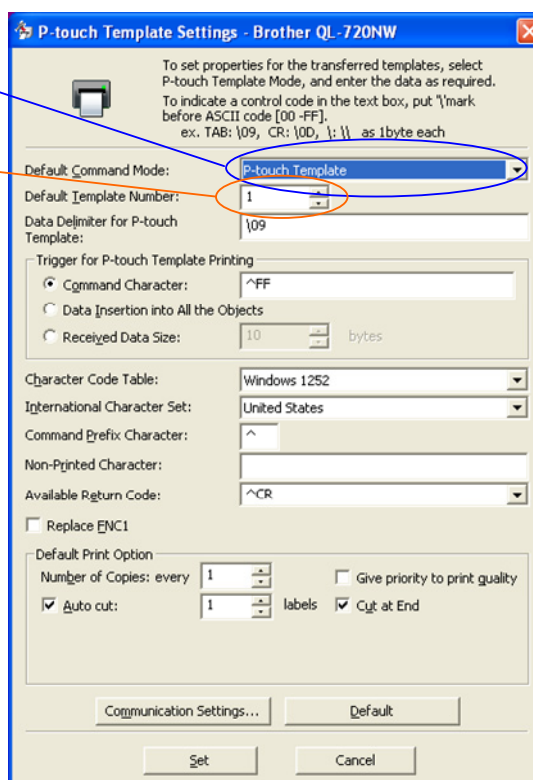
After setting (1) and (2) with the P-touch Template Settings tool, the other two commands must be sent to the printer.

3. Examples for Using Commands

(3) Initialize P-touch Template

^II   **Initialize**

ASCII:	^	I	I
Decimal:	94	73	73
Hexadecimal:	5E	49	49

Entered command

^II

Parameters

None

(4) Print Start

^FF   **Start printing**

ASCII:	^	F	F
Decimal:	94	70	70
Hexadecimal:	5E	46	46

Entered command

^FF

Parameters

None

When the printer receives the command above, the label below is printed.

3. Examples for Using Commands
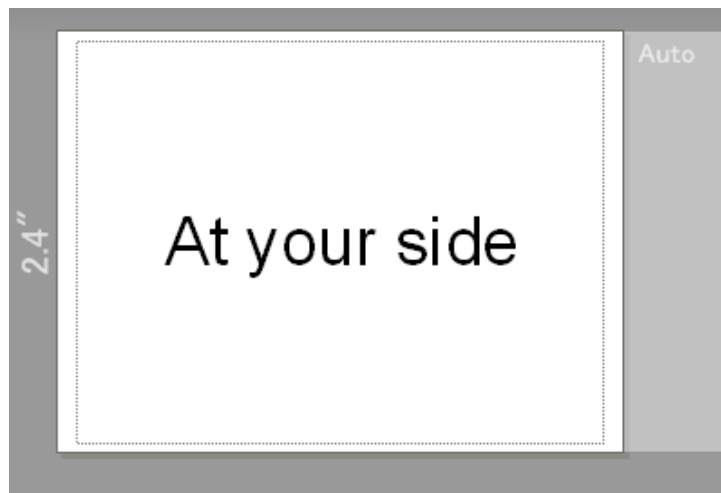
4. P-touch Template Limitations

4.1 Relating to text objects

4.1.1 Font, size, etc.

Please also refer to "5.2 Relationship between the P-touch Editor settings and the printer image" on page 22.

● Fonts specified in P-touch Editor are converted to Helsinki or Simhei, depending on the font shape, when the data is sent to the printer.

The font is converted according to the following rules: fixed pitch: Letter Gothic; serif: Brussels; san serif: Helsinki.

With symbol fonts, symbols are converted to text objects if text input mode has been entered, and the font is converted to one of the three described above. If the text input mode has been exited, simbols are converted to image objects and the selected font is not converted.

● Character sizes specified in P-touch Editor are converted to the closest built-in character size when the data is sent to the printer.

● Character sizes specified in P-touch Editor are all made the same size within an object.

● If "At Printing" is selected, a time stamp specified in P-touch Editor is not printed. If "At Printing" is not selected, the time stamp is printed with the date and time that the data was created in P-touch Editor.
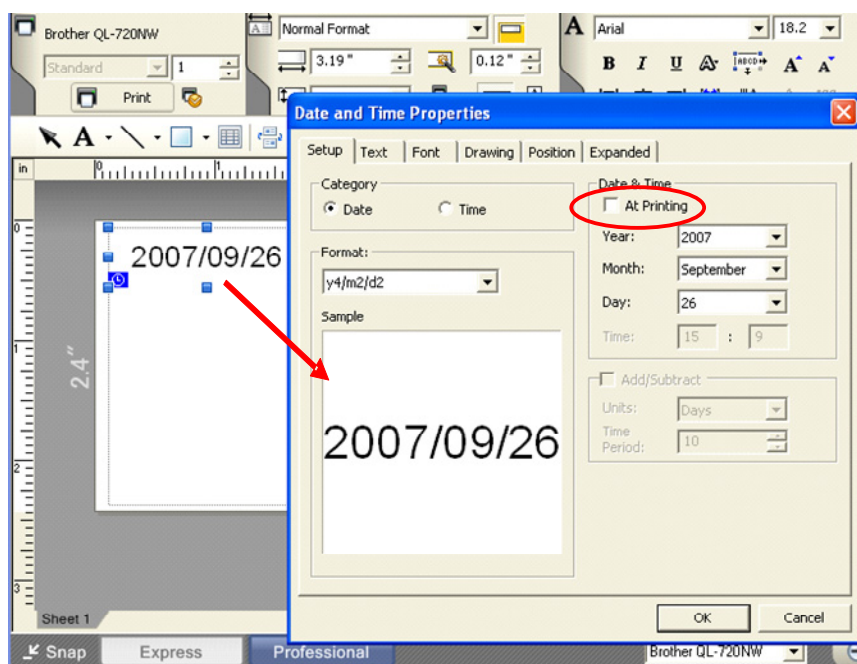
"At Printing" setting

To cancel the "At Printing" setting for a date/time in P-touch Editor, display the properties for the "Date and Time Properties" object, and then clear the "At Printing" check box.

4.1.2 Character alignment

- Horizontal alignment settings ("Justify" or "Equal Length") specified in P-touch Editor are changed to the left alignment setting.
- The setting for line feed with a line feed specified with the P-touch Editor can be set between 0 and 255 dots.
  A negative line spacing setting cannot be used in P-touch Editor. In addition, since there is an upper limit (about 21 mm) for the line width with the printer, a line spacing setting larger than this limit specified in P-touch Editor will not be applied on the printer.
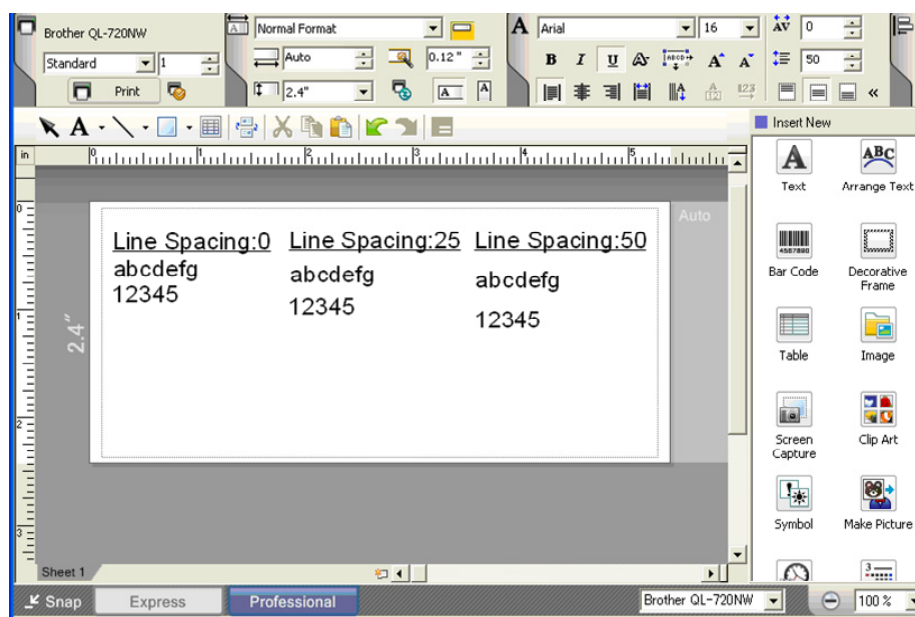
Specifying the line spacing setting in P-touch Editor

4.1.3 Text Layout settings

- Character styles specified in P-touch Editor all become the same style within an object.
- If the "Long Text" setting is selected under "Text Layout" in P-touch Editor, the vertical alignment setting is normally set for top alignment.
- If continuous length tape is used, the print length is increased to fit the text depending on the setting. (Refer to "5.2 Relationship between the P-touch Editor settings and the printer image" on page 22 for details.)
- If the "Fixed Frame Size (Wrap)" setting is selected under "Text Layout" in P-touch Editor, the object size does not change, and the text size is reduced.

  "Fixed Frame Size (Wrap)" is a setting that was added for inserting long text. Since it is possible that the text size may become extremely small if the wrapping feature is no longer applied, we recommend that "Fixed Frame Size" be selected when die-cut labels or a fixed length is specified in P-touch Editor, or that "Automatic Length" be selected when an automatic media length is specified.

Shrink to Fit	The text object size is fixed, and the text size is changed depending on the text length.
Clip Text	The text object size is fixed, and the text size is fixed. If the text is too long, the text is not printed.
Long Text	The text object width is fixed, and the text size is fixed. If the text is too long, the text object height is increased.
Automatic Length	The text object height is fixed, and the text size is fixed. If the text is too long, the text object width is increased.
Free Size	The text size is fixed. If the text is too long, the text object width is increased. If a new line is started, the text height is increased.
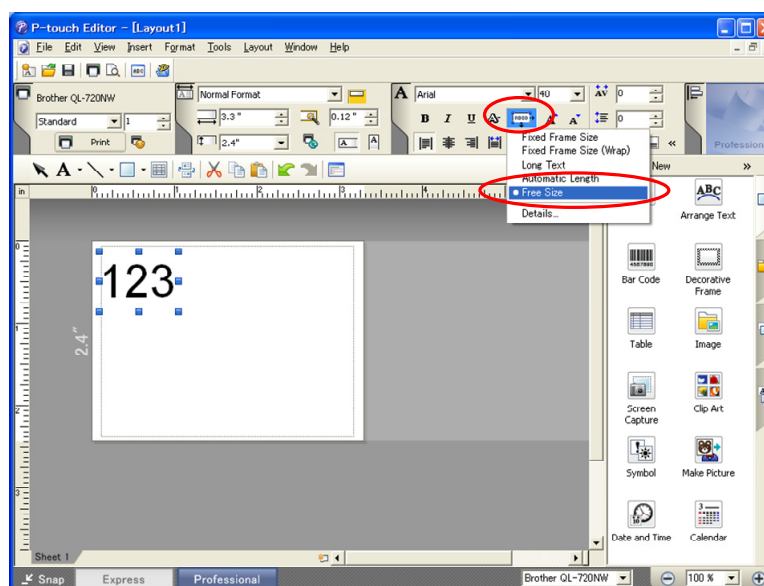
Specifying a Text Layout setting

Click the button circled in red to display a drop-down list, and then select the desired option.

4. P-touch Template Limitations

4.2 Relating to barcodes

4.2.1 Barcodes

- When trying to transfer a template containing a barcode that is not compatible with the printer, an error will occur while transferring and the template cannot be transferred to the printer.

  The following barcodes are compatible with the QL-XXX.

1D barcodes	CODE39, ITF(I-2/5), UPC-A, UPC-E, EAN-13, EAN-8, CODABAR, CODE128, GS1-128(UCC/EAN-128) , RSS
2D barcodes	PDF417, QR Code, Data Matrix, MaxiCode

- If data containing characters incompatible with the protocol are fed into the barcode object, that barcode object is not printed.

- The barcode size may differ from that in the print result with P-touch Editor.

- Since CODE128 and GS1-128(UCC/EAN-128) can easily be printed slightly larger, we recommend leaving larger margins when creating templates in P-touch Editor.

- If data fed into a barcode in a template created with P-touch Editor causes an extremely long barcode, the barcode may not be fully printed. If continuous length tape is used, the print length is increased to fit the barcode length.

- Do not insert line feed immediately before or immediately after the barcode data. Otherwise, it will be considered as part of the barcode data. In that case, the barcode will be created containing the line feed code, or the barcode will not be printed since data incompatible with the barcode protocol is entered.

- A delimiter or print start text string should be entered immediately after the barcode data.

4. P-touch Template Limitations

4.2.2 1D barcodes

● The ratio setting for 1D barcodes specified in P-touch Editor is invalid. Normally, this is fixed at 3:1.

● A barcode wider than 22.5 cm will not be printed.

● A 1D barcode taller than 99 mm is converted to 99 mm.

● The number of characters that can be entered for each protocol is shown below.

CODE39	1 to 50 characters (not including "*" on both sides) When feeding data, the asterisks (*) at the beginning and end of the data are skipped.
ITF I-2/5	1 to 64 characters The bearer bar setting specified in P-touch Editor is invalid.
EAN-8	7 characters
EAN-13	12 characters
UPC-A	11 characters
UPC-E	6 characters
CODABAR	3 to 64 characters (with "A", "B", "C" or "D" at the beginning and end) Insertion of lowercase letters "a", "b", "c" or "d" at the beginning or end will be accepted with the directly insert object command, but the text that will be printed are the uppercase letters "A", "B", "C" or "D".
CODE128	1 to 64 characters
GS1-128 (UCC/EAN-128)	1 to 64 characters
RSS-14	3 to 15 characters (begins with "01")
RSS Limited	3 to 15 characters (begins with "01"; third digit is "0" or "1")
RSS Expanded	1 to 64 numbers or 1 to 40 letters*

* ISO646 characters can be printed.

<<numbers, letters, spaces, !, ", %, &, ', (,), *, +, ,, -, ., /, :, ;, <, =, >, ? and _>>

When trying to transfer data exceeding the ranges described above, an error will occur while transferring. If the data that is fed does not meet the minimum limit, the barcode is not printed. If the data exceeds the maximum limit, only the data to the maximum limit is applied. However, if the data exceeds 64 characters, the barcode is not printed.

● If a template is created in P-touch Editor with an extremely low barcode bar height, the bars may not be printed.

4.2.3 2D barcodes

QR Code	The version setting for a QR Code specified in P-touch Editor is invalid. The version setting must be turned off. The Structured Append settings specified in P-touch Editor are invalid. If the value specified with the QR Code version command is outside of the allowable range, it is changed to AUTO. (MODEL1:0 to 14, MODEL2:0 to 40, MicroQR:0 to 4)
PDF417	Since the error correction levels for PDF417 specified in P-touch Editor are inconsistent with those on the printer, the size of the barcode may change when it is printed with P-touch Template. The width for PDF417 specified in P-touch Editor may change from the medium size to the small size. The Structured Append settings specified in P-touch Editor are invalid.
Data Matrix	The Structured Append settings specified in P-touch Editor are invalid. Macro settings specified in P-touch Editor are invalid
Maxi Code	The Structured Append settings specified in P-touch Editor are invalid. The barcode is partitioned when too much data is entered. When specifying the country code and service class with P-touch Editor, the number is entered at the beginning if the maximum number of characters is not reached. However, with the printer, the number is entered at the end. Example: "2" is specified. P-touch Editor: "200"; Printer: "002"

4. P-touch Template Limitations

4.3 Relating to images

● If a template containing overlapping images is transferred with P-touch Editor, all image data will be overlapping. (P-touch Editor displays the image created last on top.)

4.4 Relating to Numbering

● A single template can contain a maximum of 9 valid Numbering objects. Numbering will not be performed for Numbering objects that exceed the maximum of 9.
● A single object contains a single Numbering field.
● A Numbering field can contain a maximum of 15 digits. If the field contains more than 15 digits, Numbering will only be performed with the last 15 digits.
● Only Numbering fields will be saved in Numbering objects when printing is finished.
● If the number of characters that was fed in is less than the number of characters in the Numbering object, it may not be printed correctly.

Note

Numbering objects refer to text objects or barcode objects that have the Numbering function applied.

4.5 Relating to Database

● When a database is transferred, it is named using the file name + sheet name (when created in Excel).
● The file name can contain up to 15 bytes of characters.
● A maximum of 99 databases can be transferred. However, the transfer cannot be completed if the amount of data being transferred exceeds 6,144 KB.
● If there is a line feed in a cell containing text to be replaced, only the string of characters before the line feed will be replaced.
● The text to be replaced can contain up to 256 characters.
● A database can contain a maximum of 65,000 rows.
● If a database containing more than 65,000 rows is transferred, all data after the 65,000th row will be deleted.
● A database can contain a maximum of 100 columns. If a database containing more than 100 columns is transferred, all data after the 100th column will be deleted.
● If there is no database linked to the template being printed, or if the corresponding string of characters to be replaced cannot be found, an error occurs.
● If columns linked to the template being printed are not in the database, the objects related to those columns remain as they were when the template was transferred.
● When making a database file with extension CSV, make sure to save the file as Unicode text file first. Then rename the exension from ".txt" to ".csv". Otherwise the file cannot be saved properly.

4.6 Others

4.6.1 Transferring templates

- A maximum of 99 templates can be transferred. The transfer cannot be completed if the amount of data being transferred exceeds 6,144 KB.
- A single template can contain a maximum of 50 objects. If trying 51 or more objects, an error will occur and the transfer cannot be completed.
- When print data is fed, the command mode should be the P-touch Template mode.
- When a template is transferred to the printer, all values specified with dynamic commands are initialized.
- This is not compatible with split labels.
- After printing from P-touch Editor, the command mode changes to raster mode. In order to print a template, select the P-touch Template mode in the P-touch Template Settings tool or, if the previous mode in the P-touch Template Settings tool was the P-touch Template mode, turn the printer off, then on again to enter P-touch Template mode.

4.6.2 About objects in a template

- A single template can contain a total of 1000 lines. If it exceeds this limit, an error will occur during printing.
- The line feed codes (0D0A, 0D and 0A) in print data are read, then discarded. However, when specified as special data, such as delimiters, print start text strings or line feed commands, they are applied.
- The order of the objects is determined only by the last four-digit number of the object name. Objects with no numbers in their names will be at the end of the order. If objects have the same number, the order is determined in the following order: text, 1D barcodes, then 2D barcodes. If the objects are of the same type, the object created first is first in the order. We recommend that the numbers indicating the order be added at the end of the object name.

(To specify the name of an object in P-touch Editor, display the properties of the text or barcode object, and then specify the name in the "Object Name" box on the Expanded tab.)
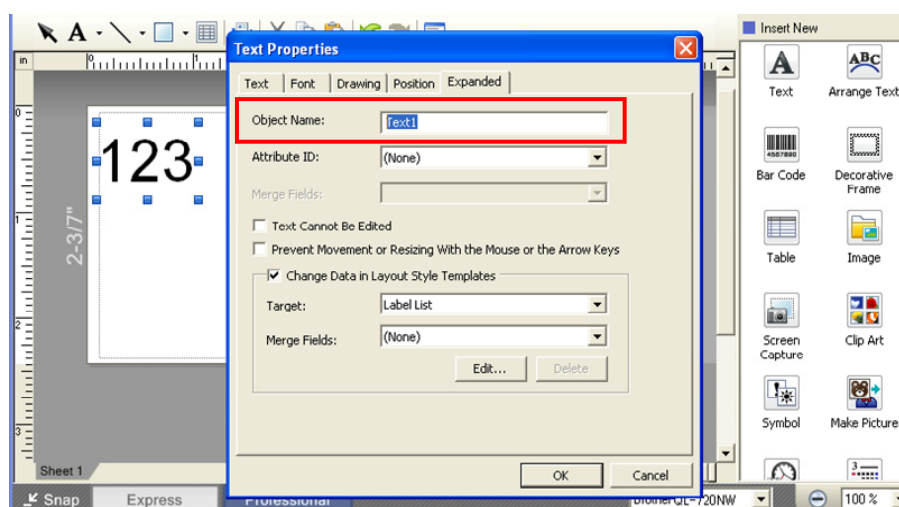
Specifying the object name

5. Precautions

5.1 Note for using static commands

Static commands are available only for the Raster command mode.

For example, if a template assigned number has to be changed to 10 dinamically, please follow the sequence below.

1) Change the command mode to Raster commanm mode.

    ESC i a 01h   (1Bh 69h 61h 01h)

2) Change the template assigned number to 10.

    ESC i X n 2 01h 00h 0Ah   (1Bh 69h 58h 6Eh 32h 01h 00h 0Ah)

3) Change the command mode to P-touch Template command mode dinamically.

    ESC i a 03h   (1Bh 69h 61h 03h)

Please refer to "6.2 Setting and retrieving commands for raster mode" for static commands.

5.2 Relationship between the P-touch Editor settings and the printer image

P-touch Editor setting Text options (Text Layout settings)			Printer image				Printed image
			Width		Height		
Text Layout	Details-Options	Wrap Text	Frame Size	Text Size	Frame Size	Text Size	
Fixed Frame Size	Clip Text		Fixed If the text is too long, the overflow text is not printed.	Fixed	Fixed If the text is too long, the overflow text is not printed.	Fixed	1 (See below.)
	Shrink to Fit		Fixed If the text is too long, even with the minimum text size, the overflow text is printed outside the frame.	Auto The text is automatically maximized to fit the frame size. *	Fixed If the text is too long, even with the minimum text size, the overflow text is printed outside the frame.	Auto The text is automatically maximized to fit the frame size.	2 (See below.)
	Clip Text	Selected					
	Shrink to Fit	Selected					
Fixed Frame Size (Wrap)	-						
Long Text	-		Fixed The overflow text is automatically sent to the new line.	Fixed	Even the overflow text is printed outside the frame.	Fixed *	3 (See below.)
Automatic Length	-		Even the overflow text is printed outside the frame.	Fixed *	Fixed If the text is too long, even with the minimum text size, the overflow text is printed outside the frame.	Auto The text is automatically maximized to fit the frame size.	4 (See below.)
Free Size	-		Even the overflow text is printed outside the frame.	Fixed *	Even the overflow text is printed outside the frame.	Fixed	5 (See below.)

(* If continuous length tape is used, the print length is increased to fit the text.)

Printed image

1   2   3   4   5

5. Precautions
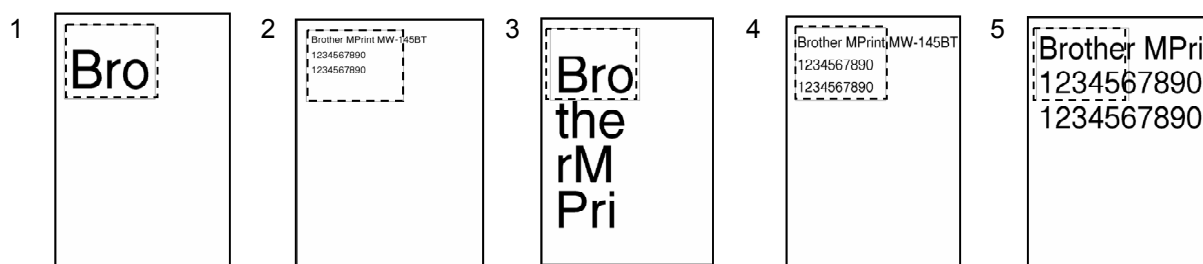
5.3 Making a template in order to save time before starting to print

- Perform the following operation to convert permanent objects into images.
- In the **Text Properties** dialog box, select the **Expanded** tab, and then select the "**Text Cannot Be Edited**" check box.
- If the **Expanded** tab of the **Text Properties** dialog box is not displayed, click [**Options**] on the **Tools** menu, and then select the "**Display Expanded Tabs of Object Properties**" check box on the **General** tab.
- Specify the text options (Text Layout settings) so that the text size is fixed.

5. Precautions

6. Control Code Lists

6.1 Setting and retrieving commands for P-touch Template mode

ASCII Code	Binary Code	Static/Dynamic	Description
^PT	5E 50 54	Dynamic	Select print start trigger
^FF	5E 46 46		Start printing
^PS	5E 50 53	Dynamic	Specify print start command text string
^PC	5E 50 43	Dynamic	Specify print start received character count
^SS	5E 53 53	Dynamic	Specify delimiter
^TS	5E 54 53	Dynamic	Select template
^CO	5E 43 4F	Dynamic	Select printer settings (cut options)
^LS	5E 4C 53	Dynamic	Specify line spacing with line feed
^CC	5E 43 43	Dynamic	Change prefix character
^RC	5E 52 43	Dynamic	Specify line feed command text string
^CN	5E 43 4E	Dynamic	Specify number of copies
^NN	5E 4E 4E	Dynamic	Specify number of Numbering copies
^ID	5E 49 44		Initialize template data
^QS	5E 51 53	Dynamic	Select print options
^QV	5E 51 56	Dynamic	Specify QR Code version
^FC	5E 46 43	Dynamic	FNC1 replacement setting
^II	5E 49 49		Initialize
^OP	5E 4F 50		Perform printer operation (feed)
^SR	5E 53 52		Status request
^VR	5E 56 52		Retrieve version information
^CR	5E 43 52		Line feed in object
^OS	5E 4F 53		Select object (object number)
^ON	5E 4F 4E		Select object (object name)
^DI	5E 44 49		Directly insert object
ESC ia	1B 69 61	Dynamic	Select command mode

Note

* The commands listed above must be used in P-touch Template mode.

* These commands (except ESC ia) cannot be used in raster mode or ESC/P mode.

* With dynamic commands, settings specified with a command are temporarily saved and applied until the printer is turned off.

6.2 Setting and retrieving commands for raster mode

ASCII Code	Binary Code	Static/Dynamic	Description
ESC iXT2	1B 69 58 54 32	Static	Select print start trigger
ESC iXP2	1B 69 58 50 32	Static	Specify print start command text string
ESC iXr2	1B 69 58 72 32	Static	Specify print start received character count
ESC iXD2	1B 69 58 44 32	Static	Specify delimiter
ESC iXa2	1B 69 58 61 32	Static	Specify non-printed text strings
ESC iXi2	1B 69 58 69 32	Static	Select command mode
ESC iXn2	1B 69 58 6E 32	Static	Select template
ESC iXf2	1B 69 58 66 32	Static	Change prefix character
ESC iXc2	1B 69 58 63 32	Static	Select printer settings (cut options)
ESC iXy2	1B 69 58 79 32	Static	Specify printer settings (cut options–specifying number of labels)
ESC iXj2	1B 69 58 6A 32	Static	Select international character set
ESC iXR2	1B 69 58 52 32	Static	Specify line feed command text string
ESC iXC2	1B 69 58 43 32	Static	Specify number of copies
ESC iXN2	1B 69 58 4E 32	Static	Specify number of Numbering copies
ESC iXF2	1B 69 58 46 32	Static	FNC1 replacement setting
ESC iXq2	1B 69 58 71 32	Static	Select print options
ESC iXT1	1B 69 58 54 31		Retrieve print start trigger setting
ESC iXP1	1B 69 58 50 31		Retrieve print start command setting text string
ESC iXr1	1B 69 58 72 31		Retrieve print start received character count
ESC iXD1	1B 69 58 44 31		Retrieve delimiter
ESC iXa1	1B 69 58 61 31		Retrieve non-printed text strings
ESC iXi1	1B 69 58 69 31		Retrieve command mode setting
ESC iXn1	1B 69 58 6E 31		Retrieve number of selected template
ESC iXc1	1B 69 58 63 31	Static	Retrieve printer settings (cut options)
ESC iXy1	1B 69 58 79 31	Static	Retrieve printer settings (cut options–specifying number of labels)
ESC iXm1	1B 69 58 6D 31		Retrieve character code set setting
ESC iXj1	1B 69 58 6A 31		Retrieve international character set setting
ESC iXf1	1B 69 58 66 31		Retrieve prefix character
ESC iXR1	1B 69 58 52 31		Retrieve line feed command setting text string

(continued from the previous page)

ASCII Code	Binary Code	Static/Dynamic	Description
ESC iXC1	1B 69 58 43 31		Retrieve number of copies setting
ESC iXN1	1B 69 58 4E 31		Retrieve number of Numbering copies setting
ESC iXF1	1B 69 58 46 31		Retrieve FNC1 replacement setting
ESC iXq1	1B 69 58 71 31		Retrieve print options

Note

* The commands listed above must be used in raster mode.

* With static commands, settings specified with a command are saved and stored in the memory.

6. Control Code Lists

7. Control Command Details

^PT   Select print start trigger

ASCII:		^	P	T	n
Decimal:		94	80	84	n
Hexadecimal:	5E	50	54	n	

Parameters

>   1≤n≤3

Description

● Selects the type of print start trigger.

> n=1: When the specified text string is received (default)

> n=2: When all objects are filled
> (Prints with the delimiter at the end of the data.)

> n=3: When the specified number of characters is received
> (not including delimiters)

● This command is a dynamic command.

Remarks

● Invalid if n is a value other than 1 through 3

Example

● When the print start trigger is "when all objects are filled":

> ^ P T 2
>
> (5Eh 50h 54h 32h)

^FF   Start printing

ASCII:	^	F	F
Decimal:	94	70	70
Hexadecimal:	5E	46	46

Parameters

   None

Description

● Starts printing.

● However, the print start trigger must be "when the specified text string is received".

   (Refer to "^PT" and "ESC iXT2".)

● The text string for the print start command can be changed.

   (Refer to "^PS" and "ESC iXP2".)

Example

● To print template number 3:

   ^ T S 0 0 3 ^ F F

   (5Eh 54h 53h 30h 30h 33h 5Eh 46h 46h)

7. Control Command Details

^PS   Specify print start command text string

ASCII:	^	P	S	n1	n2	data
Decimal:	94	80	83	n1	n2	data
Hexadecimal:	5E	50	53	n1	n2	data

Parameters

> 0≤n1≤2
>
> 0≤n2≤9
>
> 00h≤data≤FFh

Description

- Specifies the text string for the print start command.

    (n1*10)+n2:   Length of the text string (can be set between 1 and 20)

    data: Text string (The maximum number of characters that can be set is 20 characters (bytes).)

- The default text string for the print start command is "^FF".

- This command is a dynamic command.

Remarks

- Invalid if more than 20 characters have been specified

Example

- To change the text string for the print start command to "START":

    Since the text string to be specified (data), "START", contains 5 characters, n1=0 and n2=5. Therefore, the command will be as follows.

    ```
    ^PS05START
    (5Eh 50h 53h 30h 35h 53h 54h 41h 52h 54h)
    ```

^PC   Specify print start received character count

ASCII:		^	P	C	n1	n2	n3
Decimal:		94	80	67	n1	n2	n3
Hexadecimal:		5E	50	43	n1	n2	n3

Parameters

    $0 \leq n1 \leq 9$

    $0 \leq n2 \leq 9$

    $0 \leq n3 \leq 9$

Description

● Specifies the number of characters to be received in order to start printing.

    $(n1*100)+(n2*10)+n3$:   Print start received character count (bytes) (1 to 999)

● The default print start received character count is 10.

● This command is a dynamic command.

Example

● To change the print start received character count to 100 characters:

    Since n1=1, n2=0 and n3=0, the command will be as follows.

> ^ P C 1 0 0
>
> (5Eh 50h 43h 31h 30h 30h)

^SS   Specify delimiter

ASCII:		^	S	S	n1	n2	data
Decimal:		94	83	83	n1	n2	data
Hexadecimal:		5E	53	53	n1	n2	data

Parameters

      0≤n1≤2

      0≤n2≤9

      00h≤data≤FFh

Description

- The delimiter is used to indicate when to move to the next object in data that is being sent.
- Specifies the text string for the delimiter.

      (n1*10)+n2:   Length of the text string (between 1 and 20)

      data: Text string (The maximum number of characters that can be set is 20 characters (bytes).)

- The default text string for the delimiter is "09h" (Tab code).

    A text string that will not appear in the print data should be specified.

- This command is a dynamic command.

Remarks

- Invalid if more than 20 characters have been specified

Example

- To change the delimiter to "," (2Ch):

    Since the text string contains one character, n1=0 and n2=1. In addition, with the text string (data) ","

    (2Ch), the command will be as follows.

    ^ S S 0 1 ,

    (5Eh 53h 53h 30h 31h 2Ch)

7. Control Command Details

^TS   Select template

ASCII:	^	T	S	n1	n2	n3
Decimal:	94	84	83	n1	n2	n3
Hexadecimal:	5E	54	53	n1	n2	n3

Parameters

n1: 0 (Fixed)

$0 \leq n2 \leq 9$

$0 \leq n3 \leq 9$

Description

● Specifies the number of the template selected from the printer.

(n2*10)+n3: Template number (1 to 99)

● The default selection number is 1.

● This command is a dynamic command.

Remarks

● The template numbers that can be set are between 1 and 99.

This command becomes invalid if any other value has been specified or if the number that has been specified is for a template not transferred to the printer.

Example

● To select template number 99:

Since n2=9 and n3=9, the command will be as follows.

```
^ T S 0 9 9
(5Eh 54h 53h 30h 39h 39h)
```

^CO   Select printer settings (cut options)

ASCII:	^	C	O	n1	n2	n3	n4
Decimal:	94	67	79	n1	n2	n3	n4
Hexadecimal:	5E	43	4F	n1	n2	n3	n4

Parameters

        $0 \leq n1 \leq 1$

        $0 \leq n2 \leq 9$

        $0 \leq n3 \leq 9$

        $0 \leq n4 \leq 1$

Description

- Specifies the various cut options.

    n1:   Auto cut setting
    (ON: 1 (default); OFF: 0)

    $(n2*10)+n3$: Auto cut label number setting (1 to 99)
    (Default value: 1)

    n4:   Cut at end setting
    (ON: 1 (default); OFF: 0)

- This command is a dynamic command.

Remarks

- The auto cut label number setting can be between 1 and 99.

    This command becomes invalid if any other value has been specified.

Example

- To cut after every two labels:

    Since the auto cut setting will be set to ON and the auto cut label number will be two labels, n1=1, n2=0

    and n3=2. Therefore, the command will be as follows.

    ^ C O 1 0 2 0

    (5Eh 43h 4Fh 31h 30h 32h 30h)

^LS   Specify line spacing with line feed

ASCII:	^	L	S	n1	n2	n3
Decimal:	94	76	83	n1	n2	n3
Hexadecimal:	5E	4C	53	n1	n2	n3

Parameters

    0≤n1≤2

    0≤n2≤9

    0≤n3≤9

Description

● Specifies the number of dots for the line spacing when a line feed is entered.

    (n1*100)+(n2*10)+n3: Number of dots for the line spacing (0 to 255)

● The default number of dots for the line spacing when a line feed is entered is the number of dots determined when the template is created in P-touch Editor.

● This command is a dynamic command.

Remarks

● The number of dots for the line spacing can be between 0 and 255. This command becomes invalid if any other value has been specified.

    1 dot=1/300 inch

    1 dot≈0.085 mm

Example

● To set the line spacing to 10 dots:

    ^ L S 0 1 0
    (5Eh 4Ch 53h 30h 31h 30h)

7. Control Command Details

^CC   Change the prefix character

ASCII:	^	C	C	n
Decimal:	94	67	67	n
Hexadecimal:	5E	43	43	n

Parameters

    00h≤n≤FFh

Description

● Changes the prefix character code.

    n: Character code

● The default text string for the prefix character is "^".

● This command is a dynamic command.

Example

● To change the prefix character from "^" to "_":

> ^ C C 5Fh
>
> (5Eh 43h 43h 5Fh) (5Fh stands for "_" in ASCII code)

● However, if the printer is later not turned off, then on again, the prefix character remains set to "_", and the initialize command, for example, will be "_II" instead of "^II".

^RC　　　　Specify line feed command text string

ASCII:	^	R	C	n1	n2	data
Decimal:	94	82	67	n1	n2	data
Hexadecimal:	5E	52	43	n1	n2	data

Parameters

$0 \leq n1 \leq 2$

$0 \leq n2 \leq 9$

$00h \leq data \leq FFh$

Description

● Specifies the text string for the line feed command.

　　(n1*10)+n2:　Length of the text string (can be set between 1 and 20)

　　data:　　　　Text string (The maximum number of characters that can be set is 20 characters (bytes).)

● The default text string for the line feed command is "^CR".

● This command is a dynamic command.

Remarks

● Invalid if more than 20 characters have been specified

Example

● To change the text string for the line feed command to "0Dh 0Ah":

Since the text string to be specified (data) contains 2 characters, n1=0 and n2=2. Therefore, the command will be as follows.

> ^ R C 0 2 0Dh 0Ah
>
> (5Eh 52h 43h 30h 32h 0Dh 0Ah)

^CN   **Specify number of copies**

ASCII:	^	C	N	n1	n2	n3
Decimal:	94	67	78	n1	n2	n3
Hexadecimal:	5E	43	4E	n1	n2	n3

Parameters

> $0 \leq n1 \leq 9$
>
> $0 \leq n2 \leq 9$
>
> $0 \leq n3 \leq 9$

Description

- Specifies the number of copies to be printed.

  $(n1*100)+(n2*10)+n3$:   Number of copies (bytes) (1 to 999)

- The default number of copies is 1.

- This command is a dynamic command.

Remarks

- When printing is finished, the number of copies specified with this command returns to the number of copies (static value) specified from the printer.

Example

- To change the number of copies to 100:

  Since n1=1, n2=0 and n3=0, the command will be as follows.

  > ^ C N 1 0 0
  >
  > (5Eh 43h 4Eh 31h 30h 30h)

7. Control Command Details

^NN   Specify number of Numbering copies

ASCII:	^	N	N	n1	n2	n3
Decimal:	94	78	78	n1	n2	n3
Hexadecimal:	5E	4E	4E	n1	n2	n3

Parameters

     $0 \leq n1 \leq 9$

     $0 \leq n2 \leq 9$

     $0 \leq n3 \leq 9$

Description

● Specifies the number of copies to be printed with Numbering.

     (n1*100)+(n2*10)+n3:   Number of Numbering copies (bytes) (1 to 999)

● The default number of copies printed with Numbering is 1.

Remarks

● When printing is finished, the number of copies specified with this command returns to the number of copies (static value) specified from the printer.

Example

● To change the number of Numbering copies to 100:

     Since n1=1, n2=0 and n3=0, the command will be as follows.

> ^ N N 1 0 0
>
> (5Eh 4Eh 4Eh 31h 30h 30h)

^ID   Initialize template data

ASCII:	^	I	D
Decimal:	94	73	68
Hexadecimal:	5E	49	44

Parameters

     None

Description

● Returns the data in the selected template to what it was when the template was transferred.

^QS   Select print options

ASCII:	^	Q	S	n
Decimal:	94	81	83	n
Hexadecimal:	5E	51	53	n

Parameters

  n: 0, 1

Description

● Selects the print options.

  n=0: Priority given to print speed

  n=1: Priority given to print quality

● The default value for the print options is "0" (priority given to print speed).

● This command is a dynamic command.

Example

● To set the print options to give priority to print quality:

 Since n=1, the command will be as follows.

> ^ Q S 1
>
> (5Eh 51h 53h 31h)

^QV   Specify QR Code version

ASCII:	^	Q	V	n1	n2
Decimal:	94	81	86	n1	n2
Hexadecimal:	5E	51	56	n1	n2

Parameters

    0≤n1≤9

    0≤n2≤9

Description

- Specifies the QR Code version.

    (n1*10)+n2:   Version number (between 0 and 40)

- The default QR Code version is 0.

- This command becomes invalid if a value other than those that can be set (between 0 and 40) has been

    specified.

- This command is a dynamic command.

Example

- To change the version to 10:

    Since n1=1 and n2=0, the command will be as follows.

    > ^ Q V 1 0
    >
    > (5Eh 51h 56h 31h 30h)

7. Control Command Details

^FC   FNC1 replacement setting

ASCII:	^	F	C	n
Decimal:	94	70	67	n
Hexadecimal:	5E	46	43	n

Parameters

    0≤n≤1

Description

● Selects whether or not GS codes, which are included in barcode protocols such as GS1-128 (UCC/EAN-128), are replaced with FNC1 codes.

    n: FNC1 replacement setting
        (ON: 1; OFF: 0 (default))

● This command is a dynamic command.

Remarks

● Invalid if n is a value other than 1 or 0

Example

● To disable FNC1 replacement:

Since FNC1 replacement will be disabled, n=0. Therefore, the command will be as follows.

^ F C 0

(5Eh 46h 43h 30h)

7. Control Command Details

^II   Initialize

ASCII:	^	I	I
Decimal:	94	73	73
Hexadecimal:	5E	49	49

Parameters

   None

Description

● Reverts all dynamic settings to the printer settings.

   (1)   Print start trigger setting

   (2)   Print start command text string

   (3)   Print start received character count

   (4)   Delimiter

   (5)   Number of selected template

   (6)   Line spacing with line feed

   (7)   Prefix character

   (8)   Number of copies setting

   (9)   Print options setting

   (10) QR Code version setting

   (11) Line feed command text string

   (12) FNC1 replacement setting

7. Control Command Details

^OP　　　Perform printer operation (feed)

ASCII:	^	O	P	n
Decimal:	94	79	80	n
Hexadecimal:	5E	4F	50	n

Parameters

　　　1≤n≤3

Description

● Causes the printer to perform a feed operation.

　　　n=1:　　Feeds to the beginning (feed operation with continuous length tape)

　　　n=2:　　Feeds one label length (feed operation with continuous length tape)

　　　n=3:　　Cuts

Remarks

● Invalid if n is a value other than 1 or 3

Example

● To specify that the printer performs a cut operation:

> ^ O P 3
>
> (5Eh 4Fh 50h 33h)

^SR   Status request

ASCII:	^	S	R
Decimal:	94	83	82
Hexadecimal:	5E	53	52

Parameters

None

Description

● Returns the printer status.

The printer status consists of 32 bytes.

Number	Offset	Size	Name	Value/Reference
1	0	1	Print head mark	Fixed at 80h
2	1	1	Size	Fixed at 20h
3	2	1	Brother code	Fixed at "B" (42h)
4	3	1	Series code	Fixed at "4" (34h)
5	4	1	Model code	Fixed at "7" (37h)
6	5	1	Country code	Fixed at "0" (30h)
7	6	1	Printer information	Fixed at 00h
8	7	1	Reserved	Fixed at 00h
9	8	1	Error information 1	Refer to table (1) below.
10	9	1	Error information 2	Refer to table (2) below.
11	10	1	Media width	
12	11	1	Media type	Refer table (3) below.
13	12	1	Number of colors	Fixed at 00h
14	13	1	Media length (higher order bytes)	
15	14	1	Media sensor value	
16	15	1	Mode	Fixed at 00h
17	16	1	Density	Fixed at 00h
18	17	1	Media length (lower order bytes)	
19	18	1	Status type	Refer to table (4) below.
20	19	1	Phase type	Fixed at 00h
21	20	1	Phase number (higher order bytes)	Fixed at 00h
22	21	1	Phase number (lower order bytes)	Fixed at 00h
23	22	1	Notification number	Not used
24	23	1	Expansion area (number of bytes)	Fixed at 00h
25	24	8	Reserved	Fixed at 00h

7. Control Command Details

(1) Error information 1

Flag	Mask	Definition
Bit 0	01h	"No media" error
Bit 1	02h	"End of media" error
Bit 2	04h	"Cutter jam" error
Bit 3	08h	Not used
Bit 4	10h	Printer in use
Bit 5	20h	Printer turned off
Bit 6	40h	Not used
Bit 7	80h	Fan motor error

(2) Error information 2

Flag	Mask	Definition
Bit 0	01h	"Replace media" error
Bit 1	02h	"Expansion buffer is full." error
Bit 2	04h	Communication error
Bit 3	08h	Image error occurred
Bit 4	10h	"Cover open" error
Bit 5	20h	Not used
Bit 6	40h	Leading edge detection error
Bit 7	80h	System error

(3) Media type

Media Type	Value	Remarks
None	00h	No media
Continuous length tape	0Ah	
Die-cut label	0Bh	

(4) Status type

Status Type	Value	Remarks
Reply to status request	00h	
(Not used)	01h	
Error occurred	02h	
(Not used)	03h to FFh	

^VR   Retrieve version information

ASCII:	^	V	R
Decimal:	94	86	82
Hexadecimal:	5E	56	52

Parameters

None

Description

● Retrieves the version information for the printer as a 16-character text string.

^CR   Line feed in object

ASCII:	^	C	R
Decimal:	94	67	82
Hexadecimal:	5E	43	52

Parameters

None

Description

● Adds a line feed to the next line in the text object.
● Valid even if the text string for the line feed command has been changed

Example

● To print three lines:

Code: 1 ^ C R 2 ^ C R 3 ^ F F

   (31h 5Eh 43h 52h 32h 5Eh 43h 52h 33h 5Eh 46h 46h)

Print result:
```
1
2
3
```

7. Control Command Details

^OS   Select object (object number)

ASCII:	^	O	S	n1	n2
Decimal:	94	79	83	n1	n2
Hexadecimal:	5E	4F	53	n1	n2

Parameters

    $0 \leq n1 \leq 5$

    $0 \leq n2 \leq 9$

Description

● Selects an object by its object number.

    (n1*10)+n2: Object number (1 to 50)

Remarks

● The object number can be set between 1 and 50.

    This command becomes invalid if any other value has been specified.

● Use this command to insert data starting with an intermediary object.

Example

● To select the 33rd object:

```
^ O S 3 3
(5Eh 4Fh 53h 33h 33h)
```

7. Control Command Details

^ON   **Select object (object name)**

ASCII:	^	O	N	data	00
Decimal:	94	79	78	data	00
Hexadecimal:	5E	4F	4E	data	00

Parameters

    None

Description

● Selects an object by its object name.

    data: Text string (object name)

Remarks

● The maximum length of text that can be set is 20 characters. If text longer than this has been specified, the command becomes invalid. In addition, the command becomes invalid if no text has been specified.

● "00h" should be added at the end of the text. This indicates the end of the text.

● Use this command to insert data starting with an intermediary object.

Example

● To select an object with the name "TEXT1":

> ^ O N T E X T 1 00h
>
> (5Eh 4Fh 4Eh 54h 45h 58h 54h 31h 00h)

^DI   Directly insert object

ASCII:	^	D	I	n1	n2	data
Decimal:	94	68	73	n1	n2	data
Hexadecimal:	5E	44	49	n1	n2	data

Parameters

    00h≤n1≤FFh

    00h≤n2≤FEh

Description

● Inserts a text string for the specified number of characters into the object selected in the selected template. (Even if a print command or delimiter is within the specified number of characters, they are treated as data.)

    (n2*256)+n1:   Specified number of characters

    data: Text string

Example

● If "A" is specified as the print start text string, and the print start trigger is specified as the print start text string, easily print "A" with the following command.

Code: ^ D I 03h 00h 1 A 2 A

       (5Eh 44h 49h 03h 00h 31h 41h 32h 41h)

Print result: | 1A2 |

ESC i a   Select command mode

ASCII:	ESC	i	a	n
Decimal:	27	105	97	n
Hexadecimal:	1B	69	61	n

Parameters

   n=00h 01h 03h 30h 31h 33h

Description

- Switches the mode.

   n=00h or 30h: ESC/P mode (default)

   n=01h or 31h: Raster mode

   n=03h or 33h: P-touch Template mode

- This command is a dynamic command.

Remarks

- If the specified value is one other than those that can be set, raster mode will be entered.

ESC iXT2   Select print start trigger

ASCII:	ESC	i	X	T	2	n1	n2	n3
Decimal:	27	105	88	84	50	n1	n2	n3
Hexadecimal:	1B	69	58	54	32	n1	n2	n3

Parameters

    n1=01h (Fixed)

    n2=00h (Fixed)

    00h≤n3≤02h

Description

● Selects the type of print start trigger.

    n3=00h: When the specified text string is received (default)

    n3=01h: When all objects are filled
                 (Prints with the delimiter at the end of the data.)

    n3=02h: When the specified number of characters is received
                 (not including delimiters)

● This command is a static command.

Remarks

● Invalid if n3 is a value other than 00h through 02h

Example

● When the print start trigger is "when all objects are filled":

ESC i X T 2 01h 00h 01h

(1Bh 69h 58h 54h 32h 01h 00h 01h)

ESC iXP2   Specify print start command text string

ASCII:	ESC	i	X	P	2	n1	n2	data
Decimal:	27	105	88	80	50	n1	n2	data
Hexadecimal:	1B	69	58	50	32	n1	n2	data

Parameters

> 01h≤n1≤14h
>
> n2: 00h (Fixed)
>
> 00h≤data≤FFh

Description

- Specifies the text string for the print start command.

n1+(n2*256):	Length of the text string (can be set between 1 and 20)
data:	Text string (The maximum number of characters that can be set is 20 characters (bytes).)

- The default text string for the print start command is "^FF".
- This command is a static command.

Remarks

- Invalid if more than 20 characters have been specified

Example

- To change the text string for the print start command to "START":

    Since the text string to be specified (data), "START", contains 5 characters, n1=05h and n2=00h.

    Therefore, the command will be as follows.

    > ESC i X P 2 05h 00h S T A R T
    >
    > (1Bh 69h 58h 50h 32h 05h 00h 53h 54h 41h 52h 54h)

ESC iXr2   Specify print start received character count

ASCII:	ESC	i	X	r	2	n1	n2	n3	n4
Decimal:	27	105	88	114	50	n1	n2	n3	n4
Hexadecimal:	1B	69	58	72	32	n1	n2	n3	n4

Parameters

    n1: 02h (Fixed)

    n2: 00h (Fixed)

    00h≤n3≤FFh

    00h≤n4≤03h

Description

- Specifies the number of characters to be received in order to start printing.

    n3+(n4*256):   Print start received character count (bytes) (1 to 999)

- The default print start received character count is 10.

- This command is a static command.

Example

- To change the print start received character count to 100 characters:

   Since n3=64h and n4=00h, the command will be as follows.

> ESC i X r 2 02h 00h 64h 00h
>
> (1Bh 69h 58h 72h 32h 02h 00h 64h 00h)

ESC iXD2   Specify delimiter

ASCII:	ESC	i	X	D	2	n1	n2	data
Decimal:	27	105	88	68	50	n1	n2	data
Hexadecimal:	1B	69	58	44	32	n1	n2	data

Parameters

    01h≤n1≤14h

    n2: 00h (Fixed)

    00h≤data≤FFh

Description

● The delimiter is used to indicate when to move to the next object in data that is being sent.

● Specifies the text string for the delimiter.

    n1+(n2*256):   Length of the text string (between 1 and 20)

    data: Text string (The maximum number of characters that can be set is 20 characters (bytes).)

● The default text string for the delimiter is "09h" (Tab code).

● This command is a static command.

Remarks

● Invalid if more than 20 characters have been specified

Example

● To change the delimiter to "," (2Ch):

    Since the text string contains one character, n1=01h and n2=00h. In addition, with the text string (data) "," (2Ch), the command will be as follows.

> ESC i X D 2 01h 00h 2Ch
>
> (1Bh 69h 58h 44h 32h 01h 00h 2Ch)

ESC iXa2   Specify non-printed text strings

ASCII:	ESC	i	X	a	2	n1	n2	n3	data
Decimal:	27	105	88	97	50	n1	n2	n3	data
Hexadecimal:	1B	69	58	61	32	n1	n2	n3	data

Parameters

> 01h≤n1≤15h
>
> n2: 00h (Fixed)
>
> n3: 01h (Fixed)
>
> 00h≤data≤FFh

Description

- Specifies the non-printed text string.

    n1+(n2*256):   Length of the text string (0 to 20) + 1

    data: Text string (The maximum number of characters that can be set is 20 characters (bytes).)

- This command is a static command.

Remarks

- Invalid if more than 20 characters have been specified

Example

- To specify the non-printed text string as "ABCD":

    Since the text string contains four characters, n1=05h and n2=00h. Therefore, the command will be as follows.

> ESC i X a 2 05h 00h 01h A B C D
>
> (1Bh 69h 58h 61h 32h 05h 00h 01h 41h 42h 43h 44h)

ESC iXi2   Select command mode

ASCII:	ESC	i	X	i	2	n1	n2	n3
Decimal:	27	105	88	105	50	n1	n2	n3
Hexadecimal:	1B	69	58	69	32	n1	n2	n3

Parameters

    n1: 01h (Fixed)

    n2: 00h (Fixed)

    n3: 00h 01h 03h

Description

● Switches the mode.

    n3=00h: ESC/P mode (default)

    n3=01h: Raster mode

    n3=03h: P-touch Template mode

● This command is a static command.

Remarks

● Invalid if a value other than those that can be set has been specified

7. Control Command Details

ESC iXn2   Select template

ASCII:	ESC	i	X	n	2	n1	n2	n3
Decimal:	27	105	88	110	50	n1	n2	n3
Hexadecimal:	1B	69	58	6E	32	n1	n2	n3

Parameters

    n1: 01h (Fixed)

    n2: 00h (Fixed)

    01h≤n3≤63h

Description

● Selects the number of the template selected from the printer.

    n3: Template number (1 to 99)

● The default selection number is 1.

● This command is a static command.

Remarks

● The template numbers that can be set are between 1 and 99.

This command becomes invalid if any other value has been specified or if the number that has been specified is for a template not transferred to the printer.

Example

● To select template number 99:

Since n3=63h, the command will be as follows.

ESC i X n 2 01h 00h 63h

(1Bh 69h 58h 6Eh 32h 01h 00h 63h)

7. Control Command Details

ESC iXf2   Change the prefix character

ASCII:	ESC	i	X	f	2	n1	n2	n3
Decimal:	27	105	88	102	50	n1	n2	n3
Hexadecimal:	1B	69	58	66	32	n1	n2	n3

Parameters

    n1: 01h (Fixed)

    n2: 00h (Fixed)

    00h≤n3≤FFh

Description

- Changes the prefix character code.

    n3:   Character code

- The default text string for the prefix character is "^".

- This command is a static command.

Example

- To change the prefix character to "_":

> ESC i X f 2 01h 00h 5Fh ("_")
>
> (1Bh 69h 58h 66h 32h 01h 00h 5Fh)

7. Control Command Details

ESC iXc2   Select printer settings (cut options)

ASCII:	ESC	i	X	c	2	n1	n2	n3
Decimal:	27	105	88	99	50	n1	n2	n3
Hexadecimal:	1B	69	58	63	32	n1	n2	n3

Parameters

    n1: 01h (Fixed)

    n2: 00h (Fixed)

    n3: 00h 01h 08h 09h

Description

● Selects the various cut options.

    n3=00h: No cutting

    n3=01h: Automatically cuts

    n3=08h: Cut at end of printing

    n3=09h: Automatically cuts, and cuts at end of printing

● This command is a static command.

Example

● To select auto cutting:

    ESC i X c 2 01h 00h 01h

    (1Bh 69h 58h 63h 32h 01h 00h 01h)

ESC iXy2   Specify printer settings (cut options–specifying number of labels)

ASCII:	ESC	i	X	y	2	n1	n2	n3
Decimal:	27	105	88	121	50	n1	n2	n3
Hexadecimal:	1B	69	58	79	32	n1	n2	n3

Parameters

    n1: 01h (Fixed)

    n2: 00h (Fixed)

    01h≤n3≤63h

Description

● Specifies that the tape will be cut after the specified number of labels. (If the auto cut setting is ON, the tape will be cut after the number of labels specified with this setting.)

    n3: Cuts after a specified number of labels (01h to 63h)

● This command is a static command.

Remarks

● The number of labels that can be set for the auto cut is between 1 and 99. This command becomes invalid if any other value has been specified.

Example

● To cut after every five labels (However, the auto cut setting must be set to ON.):

ESC i X y 2 01h 00 05h

(1Bh 69h 58h 79h 32h 01h 00h 05h)

ESC iXj2　　Select international character set

ASCII:	ESC	i	X	j	2	n1	n2	n3
Decimal:	27	105	88	106	50	n1	n2	n3
Hexadecimal:	1B	69	58	6A	32	n1	n2	n3

Parameters

　　　n1: 01h (Fixed)

　　　n2: 00h (Fixed)

　　　00h≤n3≤0Dh, 40h

Description

● Selects the character set according to the country selected, and switches some character codes in the code table according to the value for n3.

　　　n3=00h:　USA

　　　n3=01h:　France

　　　n3=02h:　Germany

　　　n3=03h:　Britain

　　　n3=04h:　Denmark I

　　　n3=05h:　Sweden

　　　n3=06h:　Italy

　　　n3=07h:　Spain I

　　　n3=08h:　Japan

　　　n3=09h:　Norway

　　　n3=0Ah:　Denmark II

　　　n3=0Bh:　Spain II

　　　n3=0Ch:　Latin America

　　　n3=0Dh:　South Korea

　　　n3=40h:　Legal

● The following 12 codes are switched.

　　23h 24h 40h 5Bh 5Ch 5Dh 5Eh 60h 7Bh 7Ch 7Dh 7Eh

　　(For the characters that are switched, refer to "International character set table".)

● The default setting is n3=00h (USA).

● This command is a static command.

Example

● To change the international character set to that for Japan:

> ESC i X j 2 01h 00h 08h
>
> (1Bh 69h 58h 6Ah 32h 01h 00h 08h)

ESC iXR2   Specify line feed command text string

ASCII:	ESC	i	X	R	2	n1	n2	data
Decimal:	27	105	88	82	50	n1	n2	data
Hexadecimal:	1B	69	58	52	32	n1	n2	data

Parameters

　　01h≤n1≤14h

　　n2: 00h (Fixed)

　　00h≤data≤FFh

Description

● Specifies the text string for the line feed command.

　　n1+(n2*256):　　Length of the text string (can be set between 1 and 20)

　　data:　　Text string (The maximum number of characters that can be set is 20 characters (bytes).)

● The default text string for the line feed command is "^CR".

● This command is a static command.

Remarks

● Invalid if more than 20 characters have been specified

Example

● To change the text string for the line feed command to "0Dh 0Ah":

　　Since the text string to be specified (data), contains 2 characters, n1=02h and n2=00h. Therefore, the command will be as follows.

> ESC i X R 2 02h 00h 0Dh 0Ah
>
> (1Bh 69h 58h 52h 32h 02h 00h 0Dh 0Ah)

7. Control Command Details

ESC iXC2   Specify number of copies

ASCII:	ESC	i	X	C	2	n1	n2	n3	n4
Decimal:	27	105	88	67	50	n1	n2	n3	n4
Hexadecimal:	1B	69	58	43	32	n1	n2	n3	n4

Parameters

    n1: 02h (Fixed)

    n2: 00h (Fixed)

    00h≤n3≤FFh

    00h≤n4≤03h

Description

- Specifies the number of copies to be printed.

    n3+(n4*256):   Number of copies (bytes) (1 to 999)

- The default number of copies is 1.

- This command is a static command.

Example

- To change the number of copies to 100:

    Since n3=64h and n4=00h, the command will be as follows.

> ESC i X C 2 02h 00h 64h 00h
>
> (1Bh 69h 58h 43h 32h 02h 00h 64h 00h)

ESC iXN2   Specify number of Numbering copies

ASCII:	ESC	i	X	N	2	n1	n2	n3	n4
Decimal:	27	105	88	78	50	n1	n2	n3	n4
Hexadecimal:	1B	69	58	4E	32	n1	n2	n3	n4

Parameters

    n1: 02h (Fixed)

    n2: 00h (Fixed)

    00h≤n3≤FFh

    00h≤n4≤03h

Description

- Specifies the number of copies to be printed with Numbering.

    n3+(n4*256):   Number of Numbering copies (bytes) (1 to 999)

- The default number of copies printed with Numbering is 1.

- This command is a static command.

Example

- To change the number of Numbering copies to 100:

    Since n3=64h and n4=00h, the command will be as follows.

    ESC i X N 2 02h 00h 64h 00h

    (1Bh 69h 58h 4Eh 32h 02h 00h 64h 00h)

7. Control Command Details

ESC iXF2   FNC1 replacement setting

ASCII:	ESC	i	X	F	2	n1	n2	n3
Decimal:	27	105	88	70	50	n1	n2	n3
Hexadecimal:	1B	69	58	46	32	n1	n2	n3

Parameters

   n1: 01h (Fixed)

   n2: 00h (Fixed)

   n3: 00h 01h

Description

● Selects whether or not GS codes, which are included in barcode protocols such as GS1-128 (UCC/EAN-128), are replaced with FNC1 codes.

   n3=00h: FNC1 replacement setting OFF

   n3=01h: FNC1 replacement setting ON

● This command is a static command.

Example

● To disable FNC1 replacement:

ESC i X F 2 01h 00h 00h

(1Bh 69h 58h 46h 32h 01h 00h 00h)

7. Control Command Details

ESC iXq2   Select print options

ASCII:	ESC	i	X	q	2	n1	n2	n3
Decimal:	27	105	88	113	50	n1	n2	n3
Hexadecimal:	1B	69	58	71	32	n1	n2	n3

Parameters

    n1: 01h (Fixed)

    n2: 00h (Fixed)

    n3: 00h, 01h

Description

● Selects the print options.

    n3=00h: Priority given to print speed

    n3=01h: Priority given to print quality

● The default value for the print options is "00h" (priority given to print speed).

● This command is a static command.

Example

● To set the print options to give priority to print quality:

  Since n3=01h, the command will be as follows.

> ESC i X q 2 01h 00h 01h
>
> (1Bh 69h 58h 71h 32h 01h 00h 01h)

ESC iXT1   Retrieve print start trigger setting

ASCII:	ESC	i	X	T	1	n1	n2
Decimal:	27	105	88	84	49	n1	n2
Hexadecimal:	1B	69	58	54	31	n1	n2

Parameters

     n1=00h (Fixed)

     n2=00h (Fixed)

Description

● The print start trigger is returned as 3-byte data.

    [1]: 01h (Fixed)

    [2]: 00h (Fixed)

    [3]: Setting
        00h: When the specified text string is received
        01h: When all objects are filled
        02h: When the specified number of characters is received

● The retrieved value is a value specified by a static command.

Example

● The print start trigger specified for the printer is retrieved. When the setting is "when the specified text string is received":

> Code: ESC i X T 1 00h 00h
>
>   (1Bh 69h 58h 54h 31h 00h 00h)
>
> Returned value: 01h 00h 00h

ESC iXP1   Retrieve print start command setting text string

ASCII:	ESC	i	X	P	1	n1	n2
Decimal:	27	105	88	80	49	n1	n2
Hexadecimal:	1B	69	58	50	31	n1	n2

Parameters

    n1: 00h (Fixed)

    n2: 00h (Fixed)

Description

- Retrieves the text string specified for the print start command.
- 3- to 22-byte data is returned from the printer. (Varies depending on the length of the text string)

    [1,2]:   n1 n2 (number of characters) n1+(n2*256)

    [3 and later]:   Text string

- The retrieved value is a value specified by a static command.

Example

- When the text string for the print start command is specified as "START":

Code: ESC i X P 1 00h 00h

    (1Bh 69h 58h 50h 31h 00h 00h)

Returned value: 05h 00h S T A R T

    (05h 00h 53h 54h 41h 52h 54h)

7. Control Command Details

ESC iXr1   Retrieve print start received character count

ASCII:	ESC	i	X	r	1	n1	n2
Decimal:	27	105	88	114	49	n1	n2
Hexadecimal:	1B	69	58	72	31	n1	n2

Parameters

    n1: 00h (Fixed)

    n2: 00h (Fixed)

Description

● Retrieves the number of characters specified to be received in order to start printing.

● 4-byte data is returned from the printer.

    [1]:   02h (Fixed)

    [2]:   00h (Fixed)

    [3,4]: n3 n4 settings
            n3+(n4*256): Print start received character count

● The retrieved value is a value specified by a static command.

Example

● For a print start received character count of 500 characters:

> Code: ESC i X r 1 00h 00h
>
>   (1Bh 69h 58h 72h 31h 00h 00h)
>
> Returned value: 02h 00h F4h 01h (244+1*256=F4h+01h*256=500 characters)

ESC iXD1   Retrieve delimiter

ASCII:	ESC	i	X	D	1	n1	n2
Decimal:	27	105	88	68	49	n1	n2
Hexadecimal:	1B	69	58	44	31	n1	n2

Parameters

    n1: 00h (Fixed)

    n2: 00h (Fixed)

Description

- Retrieves the text string specified for the delimiter.
- 3- to 22-byte data is returned from the printer. (Varies depending on the length of the text string)

    [1,2]:   n1 n2 (number of characters) n1+(n2*256)

    [3 and later]:   Text string

- The retrieved value is a value specified by a static command.

Example

- When the delimiter is set as "," (2Ch):

Code: ESC i X D 1 00h 00h

    (1Bh 69h 58h 44h 31h 00h 00h)

Returned value: 01h 00h

    (01h 00h 2Ch)

7. Control Command Details

ESC iXa1　Retrieve non-printed text strings

ASCII:	ESC	i	X	a	1	n1	n2	n3
Decimal:	27	105	88	97	49	n1	n2	n3
Hexadecimal:	1B	69	58	61	31	n1	n2	n3

Parameters

> n1: 01h (Fixed)
>
> n2: 00h (Fixed)
>
> n3: 01h (Fixed)

Description

● Retrieves the specified non-printed text string.

● 2- to 22-byte data is returned from the printer. (Varies depending on the length of the text string)

> [1,2]:　　　　　n1 n2 (number of characters) n1+(n2*256)
>
> [3 and later]:　Text string

● The retrieved value is a value specified by a static command.

Example

● When "ABCD" is specified as the non-printed text string:

> The following command is sent to the printer.

> Code: ESC i X a 1 01h 00h 01h
>
> 　　　(1Bh 69h 58h 61h 31h 01h 00h 01h)
>
> Returned value: 04h 00h A B C D
>
> 　　　(04h 00h 41h 42h 43h 44h)

ESC iXi1   Retrieve command mode setting

ASCII:	ESC	i	X	i	1	n1	n2
Decimal:	27	105	88	105	49	n1	n2
Hexadecimal:	1B	69	58	69	31	n1	n2

Parameters

    n1: 00h (Fixed)

    n2: 00h (Fixed)

Description

● Retrieves the setting for the command mode.

● 3-byte data is returned from the printer.

    [1]: 01h (Fixed)

    [2]: 00h (Fixed)

    [3]: Setting
        00h: ESC/P mode
        01h: Raster mode
        03h: P-touch Template mode

● The retrieved value is a value specified by a static command.

Example

● When the setting is for raster mode:

Code: ESC i X i 1 00h 00h

    (1Bh 69h 58h 69h 31h 00h 00h)

Returned value: 01h 00h 01h

ESC iXn1　Retrieve number of selected template

ASCII:	ESC	i	X	n	1	n1	n2
Decimal:	27	105	88	110	49	n1	n2
Hexadecimal:	1B	69	58	6E	31	n1	n2

Parameters

　　n1: 00h (Fixed)

　　n2: 00h (Fixed)

Description

● Retrieves the template number selected from the printer.

● 3-byte data is returned from the printer.

　　[1]: 01h (Fixed)

　　[2]: 00h (Fixed)

　　[3]: Setting

● The retrieved value is a value specified by a static command.

Example

● When template number 99 is selected:

Code: ESC i X n 1 00h 00h

　　　(1Bh 69h 58h 6Eh 31h 00h 00h)

Returned value: 01h 00h 63h

ESC iXc1　Retrieve printer settings (cut options)

ASCII:	ESC	i	X	c	1	n1	n2
Decimal:	27	105	88	99	49	n1	n2
Hexadecimal:	1B	69	58	63	31	n1	n2

Parameters

    n1: 00h (Fixed)

    n2: 00h (Fixed)

Description

● Retrieves the various cut settings.

● 3-byte data is returned from the printer.

    [1]:　01h (Fixed)

    [2]:　00h (Fixed)

    [3]:　Setting
        00h: No cutting
        01h: Automatically cuts

● The retrieved value is a value specified by a static command.

Example

● When auto cutting is selected:

> Code: ESC i X c 1 00h 00h
>
>   (1Bh 69h 58h 63h 31h 00h 00h)
>
> Returned value: 01h 00h 01h

ESC iXy1   Retrieve printer settings (cut options–specifying number of labels)

ASCII:	ESC	i	X	y	1	n1	n2
Decimal:	27	105	88	121	49	n1	n2
Hexadecimal:	1B	69	58	79	31	n1	n2

Parameters

> n1: 00h (Fixed)
>
> n2: 00h (Fixed)

Description

- Retrieves the setting for cutting after a specified number of labels.
- 3-byte data is returned from the printer.

    [1]: 01h (Fixed)

    [2]: 00h (Fixed)

    [3]: Setting

- The retrieved value is a value specified by a static command.

Example

- When cutting is specified for every five labels:

    Code: ESC i X y 1 00h 00h

    (1Bh 69h 58h 79h 31h 00h 00h)

    Returned value: 01h 00h 05h

ESC iXj1   Retrieve international character set setting

ASCII:	ESC	i	X	j	1	n1	n2
Decimal:	27	105	88	106	49	n1	n2
Hexadecimal:	1B	69	58	6A	31	n1	n2

Parameters

    n1: 00h (Fixed)

    n2: 00h (Fixed)

Description

● Retrieves the international character set setting.

● 3-byte data is returned from the printer.

    [1]: 01h (Fixed)

    [2]: 00h (Fixed)

    [3]: Setting

        00h: USA

        01h: France

        02h: Germany

        03h: Britain

        04h: Denmark I

        05h: Sweden

        06h: Italy

        07h: Spain I

        08h: Japan

        09h: Norway

        0Ah: Denmark II

        0Bh: Spain II

        0Ch: Latin America

        0Dh: South Korea

        40h: Legal

● The retrieved value is a value specified by a static command.

Example

● When the international character set is that for Japan:

> Code: ESC i X j 1 00h 00h
>
>   (1Bh 69h 58h 6Ah 31h 00h 00h)
>
> Returned value: 01h 00h 08h

ESC iXf1   Retrieve prefix character

ASCII:	ESC	i	X	f	1	n1	n2
Decimal:	27	105	88	102	49	n1	n2
Hexadecimal:	1B	69	58	66	31	n1	n2

Parameters

    n1: 00h (Fixed)

    n2: 00h (Fixed)

Description

- Retrieves the prefix character code.
- 3-byte data is returned from the printer.

    [1]:   01h (Fixed)

    [2]:   00h (Fixed)

    [3]:   Specified character

- The retrieved value is a value specified by a static command.

Example

- When the prefix character is set to "_":

    Code: ESC i X f 1 00h 00h

          (1Bh 69h 58h 66h 31h 00h 00h)

    Returned value: 01h 00h 5Fh (5Fh stands for "_" in ASCII code)

7. Control Command Details

ESC iXR1   Retrieve line feed command setting text string

ASCII:	ESC	i	X	R	1	n1	n2
Decimal:	27	105	88	82	49	n1	n2
Hexadecimal:	1B	69	58	52	31	n1	n2

Parameters

    n1: 00h (Fixed)

    n2: 00h (Fixed)

Description

● Retrieves the text string specified for the line feed command.

● 2- to 22-byte data is returned from the printer. (Varies depending on the length of the text string)

    [1, 2]:   n1 n2 (number of characters) n1+(n2*256)

    [3 and later]:   Text string

● The retrieved value is a value specified by a static command.

Example

● When the text string for the line feed command is specified as "0Dh 0Ah":

Code: ESC i X R 1 00h 00h

        (1Bh 69h 58h 52h 31h 00h 00h)

Returned value: 02h 00h 0Dh 0Ah

7. Control Command Details

ESC iXC1   Retrieve number of copies setting

ASCII:	ESC	i	X	C	1	n1	n2
Decimal:	27	105	88	67	49	n1	n2
Hexadecimal:	1B	69	58	43	31	n1	n2

Parameters

    n1: 00h (Fixed)

    n2: 00h (Fixed)

Description

- Retrieves the number of copies specified to be printed.
- 4-byte data is returned from the printer.

    [1]:   02h (Fixed)

    [2]:   00h (Fixed)

    [3, 4]: n3 n4 settings
            n3+(n4*256): Print start received character count

- The retrieved value is a value specified by a static command.

Example

- When the number of copies is set to 500:

> Code: ESC i X C 1 00h 00h
>
>   (1Bh 69h 58h 43h 31h 00h 00h)
>
> Returned value: 02h 00h F4h 01h (F4h+01h*256=244+256=500)

ESC iXN1   Retrieve number of Numbering copies setting

ASCII:	ESC	i	X	N	1	n1	n2
Decimal:	27	105	88	78	49	n1	n2
Hexadecimal:	1B	69	58	4E	31	n1	n2

Parameters

    n1: 00h (Fixed)

    n2: 00h (Fixed)

Description

● Retrieves the number of copies specified to be printed with Numbering.

● 4-byte data is returned from the printer.

    [1]:   02h (Fixed)

    [2]:   00h (Fixed)

    [3, 4]: n3 n4 settings
            n3+(n4*256): Number of Numbering copies

● The retrieved value is a value specified by a static command.

Example

● When the number of Numbering copies is set to 500:

> Code: ESC i X N 1 00h 00h
>
>   (1Bh 69h 58h 4Eh 31h 00h 00h)
>
> Returned value: 02h 00h F4h 01h (F4h+01h*256=244+256=500)

ESC iXF1 Retrieve FNC1 replacement setting

ASCII:	ESC	i	X	F	1	n1	n2
Decimal:	27	105	88	70	49	n1	n2
Hexadecimal:	1B	69	58	46	31	n1	n2

Parameters

    n1: 00h (Fixed)

    n2: 00h (Fixed)

Description

● Retrieves the FNC1 replacement setting.

● 3-byte data is returned from the printer.

    [1]: 01h (Fixed)

    [2]: 00h (Fixed)

    [3]: Setting
          00h: FNC1 replacement setting OFF
          01h: FNC1 replacement setting ON

● The retrieved value is a value specified by a static command.

Example

● When the FNC1 replacement setting is OFF:

Code: ESC i X F 1 00h 00h

    (1Bh 69h 58h 46h 31h 00h 00h)

Returned value: 01h 00h 00h

ESC iXq1   Retrieve print options

ASCII:	ESC	i	X	q	1	n1	n2
Decimal:	27	105	88	113	49	n1	n2
Hexadecimal:	1B	69	58	71	31	n1	n2

Parameters

    n1: 00h (Fixed)

    n2: 00h (Fixed)

Description

- Retrieves the print options setting.
- 3-byte data is returned from the printer.

    [1]:   01h (Fixed)

    [2]:   00h (Fixed)

    [3]:   n3 Settings

- The retrieved value is a value specified by a static command.

Example

- When the print options are set to give priority to print quality:

> Code: ESC i X q 1 00h 00h
>
>   (1Bh 69h 58h 71h 31h 00h 00h)
>
> Returned value: 01h 00h 01h

Appendix A: Specifications

BROTHER QL-720NW P-touch Template specifications

<table>
<tr><td rowspan="11">Printing</td><td colspan="2">Printing method</td><td>Raster printing (PTCBP mode)
<u>ESC/P printing</u>
P-touch Template printing</td></tr>
<tr><td colspan="2">Maximum print length</td><td>1 m</td></tr>
<tr><td colspan="2">Resolution (dpi)</td><td>300 dpi × 300 dpi</td></tr>
<tr><td rowspan="7">Text</td><td>Font</td><td>Bitmap fonts: Helsinki, Simhei</td></tr>
<tr><td>Size (dots)</td><td>Bitmap fonts: 16 × 16, 24 × 24, 32 × 32,48 × 48, 64 × 64,
           96 × 96,128 × 128, 144 × 144, 192 × 192,240 × 240,
           256 × 256, 288 × 288, 320× 320, 336 × 336,
           384 × 384 dots</td></tr>
<tr><td>Character style</td><td>None, Bold, Italics, Outline, Shadow, Shadow + Outline</td></tr>
<tr><td>Underline</td><td>Off, On</td></tr>
<tr><td>Character width</td><td>-</td></tr>
<tr><td>Horizontal alignment</td><td>Left, Center, Right</td></tr>
<tr><td>Rotate</td><td>Portrait, landscape</td></tr>
<tr><td rowspan="2">Bar-code</td><td>Protocols</td><td>CODE39, ITF (I-2/5), EAN-13, EAN-8, UPC-A, UPC-E, CODABAR, CODE128, GS1-128 (UCC/EAN-128), QR Code, PDF417, Data Matrix, MaxiCode, RSS-14(Standard, Truncated, Stacked, Stacked Omni), RSS-Limited, RSS Expanded(Standard, Stacked)</td></tr>
<tr><td>Width</td><td>Large, Medium, Small, Extra Small</td></tr>
<tr><td rowspan="6">Transmission</td><td rowspan="6">RS</td><td>Baud rate (bps)</td><td>115.2k, 57.6k, <u>9600</u></td></tr>
<tr><td>Busy</td><td><u>DTR</u>, Xon/Xoff</td></tr>
<tr><td>Bit length</td><td><u>8</u>, 7</td></tr>
<tr><td>Parity</td><td><u>NONE</u>, ODD, EVEN</td></tr>
<tr><td>Stop bit</td><td>1 bit</td></tr>
</table>

Settings that appear in **bold** and <u>underlined</u> are the default settings.

Appendix B: Character Code Tables

Character code tables

	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
0			SP	0	@	P	`	p								
1			!	1	A	Q	a	q								
2			"	2	B	R	b	r								
3			#	3	C	S	c	s								
4			$	4	D	T	d	t								
5			%	5	E	U	e	u								
6			&	6	F	V	f	v								
7			'	7	G	W	g	w								
8			(	8	H	X	h	x								
9			)	9	I	Y	i	y								
A			*	:	J	Z	j	z								
B			+	;	K	[	k	{								
C			,	<	L	\	l	¦								
D			-	=	M	]	m	}								
E			.	>	N	^	n	~								
F			/	?	O	_	o	DEL								

Note

" ▉ " indicates that the character will switch when the international character set is changed.

International character set table

Corresponding characters that switch in each language when the international character set is changed

n		23	24	40	5B	5C	5D	5E	60	7B	7C	7D	7E
0	United States (U.S.A)	#	$	@	[	\	]	^	`	{	¦	}	~
1	France	#	$	à	°	ç	§	^	`	é	ù	è	¨
2	Germany	#	$	§	Ä	Ö	Ü	^	`	ä	ö	ü	ß
3	Britain (U.K.)	£	$	@	[	\	]	^	`	{	¦	}	~
4	Denmark I	#	$	@	Æ	Ø	Å	^	`	æ	ø	å	~
5	Sweden	#	¤	É	Ä	Ö	Å	Ü	é	ä	ö	å	ü
6	Italy	#	$	@	°	\	é	^	ù	à	ò	è	ì
7	Spain I	Pt	$	@	¡	Ñ	¿	^	`	¨	ñ	}	~
8	Japan	#	$	@	[	¥	]	^	`	{	¦	}	~
9	Norway	#	¤	É	Æ	Ø	Å	Ü	é	æ	ø	å	ü
10	Denmark II	#	$	É	Æ	Ø	Å	Ü	é	æ	ø	å	ü
11	Spain II	#	$	á	¡	Ñ	¿	é	`	í	ñ	ó	ú
12	Latin America	#	$	á	¡	Ñ	¿	é	ü	í	ñ	ó	ú
13	South Korea	#	$	@	[	₩	]	^	`	{	¦	}	~
64	Legal	#	$	§	°	´	"	¶	`	©	®	†	TM

Appendix B: Character Code Tables

Appendix C: Troubleshooting

If printing does not begin (main most frequent cause)

(1) The communication settings are incorrect.

(2) The command mode is not in the P-touch Template mode.

(3) The conditions for the print start trigger are not met.

The following three types of print start triggers exists, but the current selection is incorrect.

● When the specified text string is received

● When all objects are filled

● When the specified number of characters is received

If the settings described above are incorrect, use the P-touch Template Settings tool to specify the settings.

If a template linked to a database is not printed

(1) A delimiter character must be entered after the search text.

(2) The print start trigger must be "when the specified text string is received".

Example:

To search for the key code (333333333333) for "Chocolate", then print:

	A	B	C
1	Key code	Product	Price
2	111111111111	Cake	1.5
3	222222222222	Candy	1
4	333333333333	Chocolate	2.5
5	444444444444	Cookie	1.5
6	555555555555	Pie	4.5

333333333333 09h ^ F F

Appendix D: Introducing the Brother Developer Center

Useful information for developers, such as applications, tools, SDKs as well as FAQs, are provided in the Brother Developer Center.

http://www.brother.com/product/dev/index.htm