Panasonic

OPERATING INSTRUCTIONS

4-Color
Graphic Penwriter

MODEL NO. RK-P400C

Read these instructions completely before operating this set.

Thank you for purchasing
the Panasonic RK-P400C 4-Color Graphic Penwriter.

SPECIAL FEATURES

- 4-Color Printing
  (Black, Red, Green, Blue)
- 4 Graphic Packages (Pie, Bar, Line, Radar) and Column Layout
- Automatic Correction of Characters Typed in Black Ink
- 4 KB/9-Phrase Text Memory
  (Total 3190 characters)
- Word-Wrap, Word Search and Edit
- Wide 24-Character LCD Display
- Built-in Computer Interface (RS-232C)
- 10 Different Character Sizes
- Selectable Courier/Italic Character Font
- AC/Battery Operation (AC Adaptor Included)

CAUTION

This equipment has been tested and found to comply with the limits for class B computing devices in accordance with the specifications set forth in Subpart J of Part 15 of the FCC rules. If this equipment causes interference to radio or television reception, which can be determined by turning the equipment on and off, use the equipment in another location and/or utilize an electrical outlet different from that used by the receiver.

The serial number of this product may be found on the label inside the Battery Compartment.
Write down the serial number of this unit in the space provided and retain this book as a permanent record of your purchase to aid in identification in the event of theft.

Model No. **RK-P400C**

Serial No. _____

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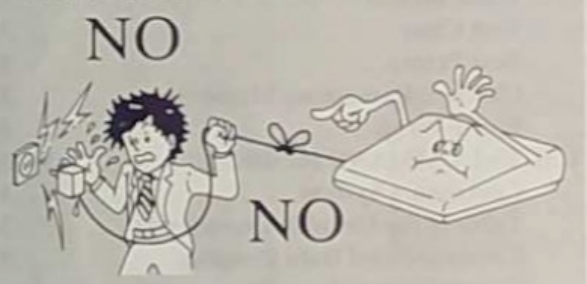
PRECAUTIONS

Power supply

Always hold the body of the AC Adaptor when inserting into and removing from the AC Socket.

- Do not handle with wet hands.
- Do not pull the cord with excessive force, and do not twist or stretch it.



Modifications, contact, etc.

Modifications cause accidents.

- Touching the inside or inserting clips or other metal objects may cause electric shock or other accidents.

Keep away from water.

- Fire or electric shock may result.

Place of use

Avoid use in locations where there is strong vibration or a lot of dust.

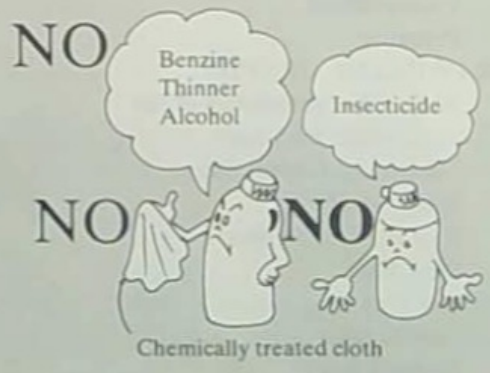
- Avoid use on inclined surfaces.

- Avoid use in areas exposed to direct sunlight, heat and high humidity.

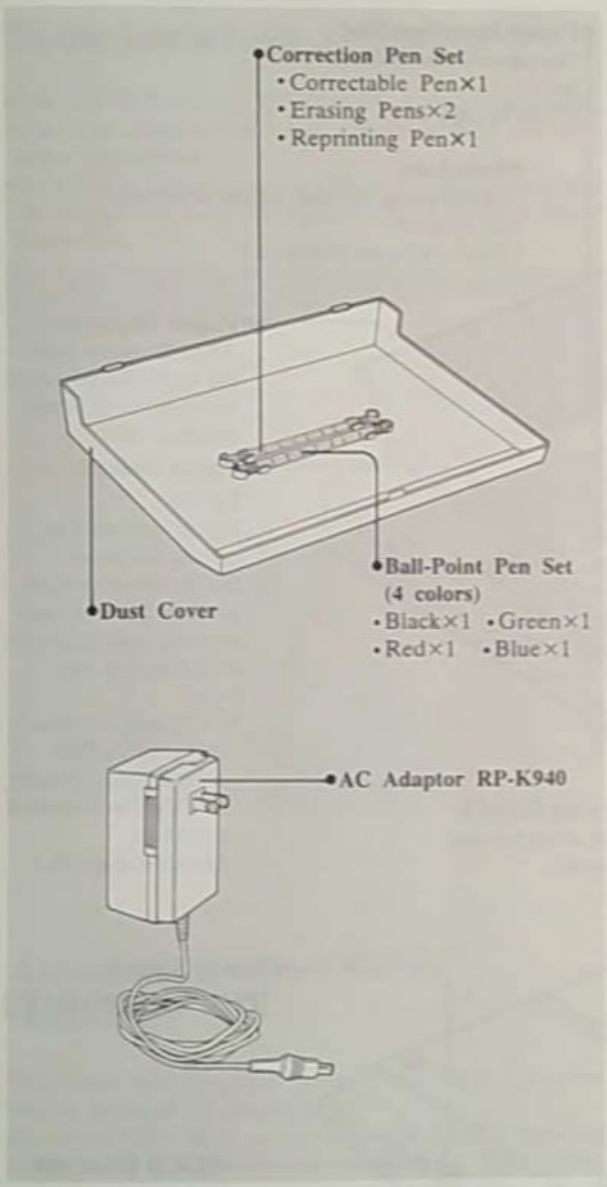
Cleaning of the case

Wipe the case with a dry cloth.
When the case is very dirty, moisten the cloth with water or apply a little soapy water to the cloth, and wipe off the dirt. Wipe again with a dry, clean cloth.

- Benzine, thinner, alcohol, chemically treated cloth and insecticides must be kept away from the case, as they can cause deterioration and discoloration.



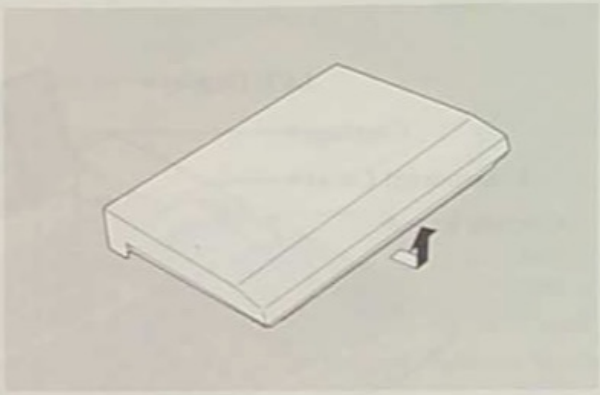
ACCESSORIES



DUST COVER REMOVAL

Removal

Pull the latch on the front of the Dust Cover slightly towards the front and then remove the Dust Cover.



Installation

Insert the two "extensions" at the rear of the Dust Cover into the Dust Cover Installation Holes on the unit, and push down gently the front of the Dust Cover to lock it.

NAMES AND OPERATION OF THE MAIN PARTS

Color Change Button (COLOR)
This button is pressed to select one of the four colors or to exchange the pens. The Pen Holder turns when this button is pressed.

Paper Insertion Slot
The paper is inserted into this slot.
(Refer to page 16.)

Selectors
Before using this unit, set the selectors as required.
(Refer to pages 10 and 11.)

LCD Display

Carriage

Transparent Cover

Graphic Keys
(Refer to page 14.)

Paper Support
Align the paper with the Paper Support and insert it into the Paper Insertion Slot.

Paper Release Lever
This lever is used to release the paper. Pull this lever towards you to adjust the paper position, and then move it back to lock the paper.
- For paper insertion using the **PAPER INSERT** Key, return this lever to its locked position.

(Refer to page 16.)

Keyboard
(Refer to page 12 to 15.)

Battery Compartment
(Refer to page 7.)

Carrying Handle
Do not swing the unit excessively.

Power Switch [POWER (ON • OFF)]

LCD Contrast Adjustor (CONTRAST)
The contrast of the LCD Display can be adjusted.

External Power Input Jack [DC IN 9 V (⊖-⊃-⊕)]
This unit can be used with household AC power by means of the RP-K940 AC Adaptor..
(Refer to page 7.)

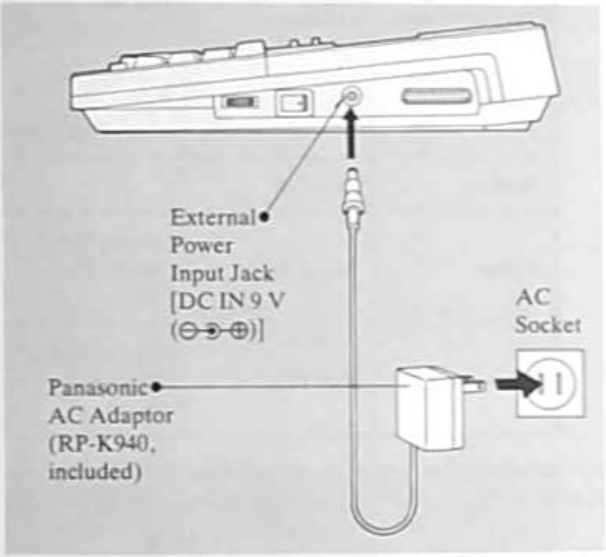
RS-232C Interface Connector
This interface is used for connecting the RK-P400C as a printer to a computer.
(Refer to page 39.)

Dust Cover Installation Holes
(Refer to page 5.)

POWER SUPPLY

To use household AC power

- Use only the Panasonic RP-K940 AC Adaptor (included).
- Use of an adaptor of different voltage, polarity, etc. may cause breakdowns.
- When using batteries, remove the AC Adaptor from the AC Socket and remove the plug from the External Power Input Jack.



Automatic power "OFF" function

When there is no key input for about 10 minutes, the power will be switched off automatically.
For power "ON" from automatic power "OFF" status, set the **POWER** Switch to "OFF" and then to "ON" again.

Memory back-up function

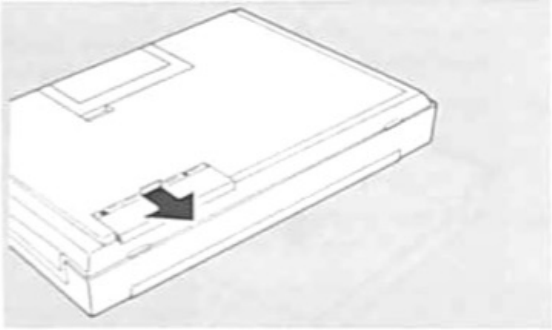
When the batteries are left in this unit or when the AC Adaptor is left connected, the following will remain memorized even after the **POWER** Switch has been set to "OFF".

- **Text memory**
- **Graphic data**
- **RS-232C transmission format**
- **Margins, Tab setting positions**

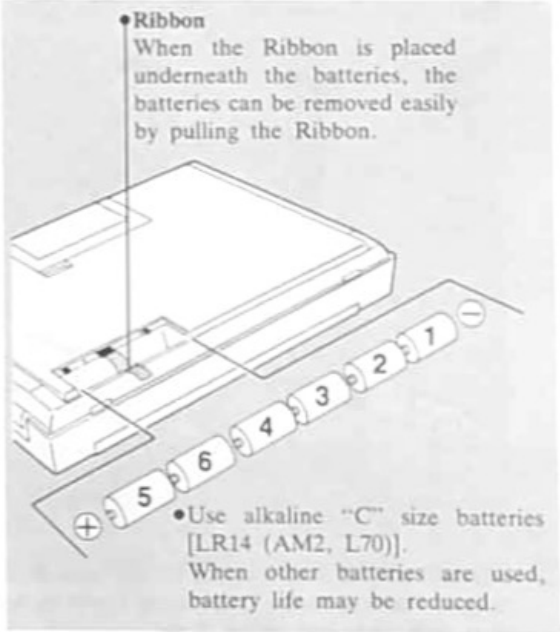
When the batteries are being changed, memory back-up is possible for about 15 minutes even when the batteries are removed.

To use batteries

1 Remove the lid of the Battery Compartment by pushing and sliding it.



2 Insert 6 batteries in the sequence indicated by the numbers as shown in the figure, then reinstall the lid of the Battery Compartment.



Wrong use of the batteries can cause damage and leakage of the battery liquid.

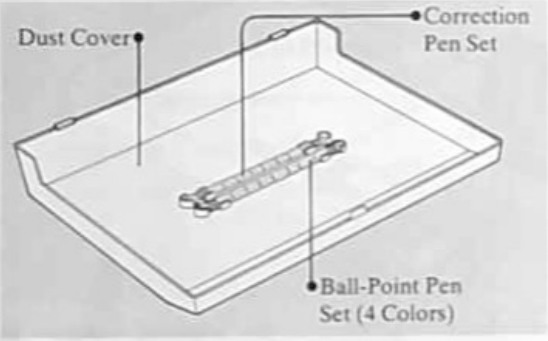
- Do not mix new batteries with used ones.
- Always use the same type of batteries.
- Do not recharge, short-circuit, disassemble, heat, or throw batteries into a fire.
- If this unit is not used for a long period of time or is used only from an AC power source, remove all the batteries to prevent potential damage due to possible battery leakage.

- When the batteries have become weak, the LCD Display will flash. At that time, exchange all batteries.

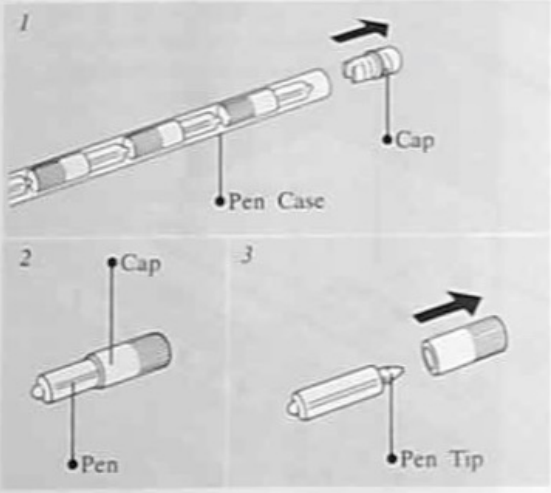
PEN INSTALLATION AND REMOVAL

Installation

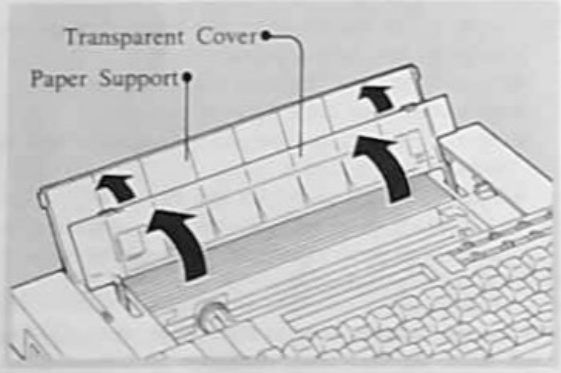
1 Remove the Ball-Point Pen Set or the Correction Pen Set from the inside of the Dust Cover.



2 Remove the Cap of the Pen Case as shown in the figure. Next, remove the Caps from the pens.



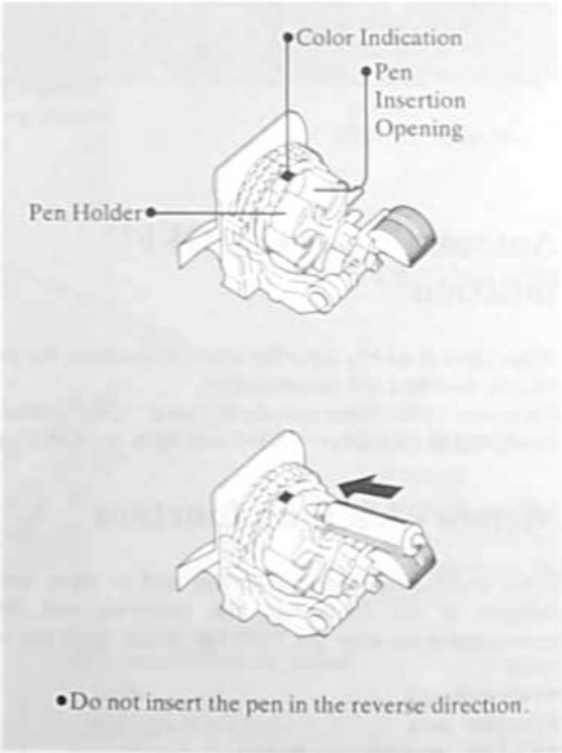
3 Set the **POWER** Switch to "ON" and open the Paper Support, then open the Transparent Cover by holding it at both ends and lifting it up.



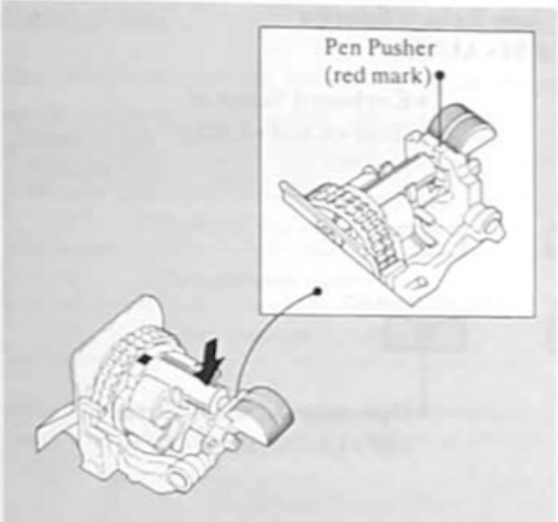
4 Confirm the Color Indication of the Pen Holder, insert the pen into the Pen Insertion Opening and lightly push the rear of the pen downward.

- Install the pens according to the following table.

Color Indication of the Pen Holder	Ball-Point Pen Set (4 Colors)	Correction Pen Set
Black	Black Pen	Correctable Pen (Gray Pen Tip)
Red	Red Pen	
Green	Green Pen	Erasing Pen (White Pen Tip)
Blue	Blue Pen	Reprinting Pen (Black Pen Tip)



- Do not insert the pen in the reverse direction.



•Confirm that the rear part of the pen is in contact with the Pen Pusher.

5 Use the **COLOR** Button to turn the Pen Holder and install the remaining pens as explained above, observing the Color Indications.

•The following display appears each time when the **COLOR** Button is pressed in DP mode.

Color Indication of the Pen Holder	Display
Black	BLACK (CORRECTABLE PEN)
Red	RED
Green	GREEN (ERASING PEN)
Blue	BLUE (REPRINTING PEN)

6 Close the Transparent Cover.

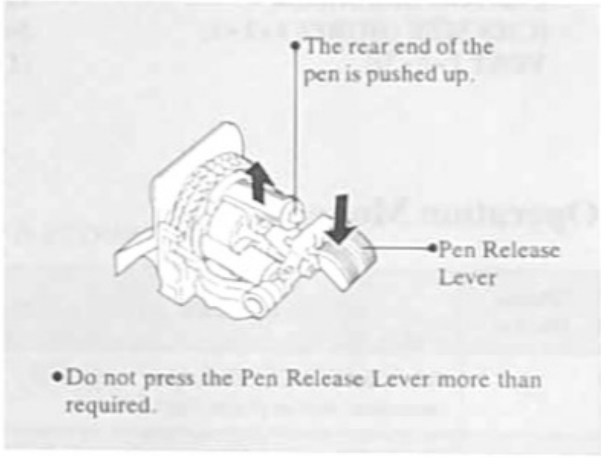
•Directly after power "ON", the Black Color Indication comes to the top.
•After installing the pens, set the **POWER** Switch to "OFF" and then again to "ON" so that the Pen Holder is reset to its home (initial) position.
•Do not turn the Pen Holder by hand.

Removal

1 Set the **POWER** Switch to "ON" and open the Paper Support, then open the Transparent Cover by holding it at both ends and lifting it up.

2 Use the **COLOR** Button to turn the Pen Holder so that the pen to be removed comes to the top.

3 Push the Pen Release Lever lightly to raise the rear end of the pen, then remove the pen.

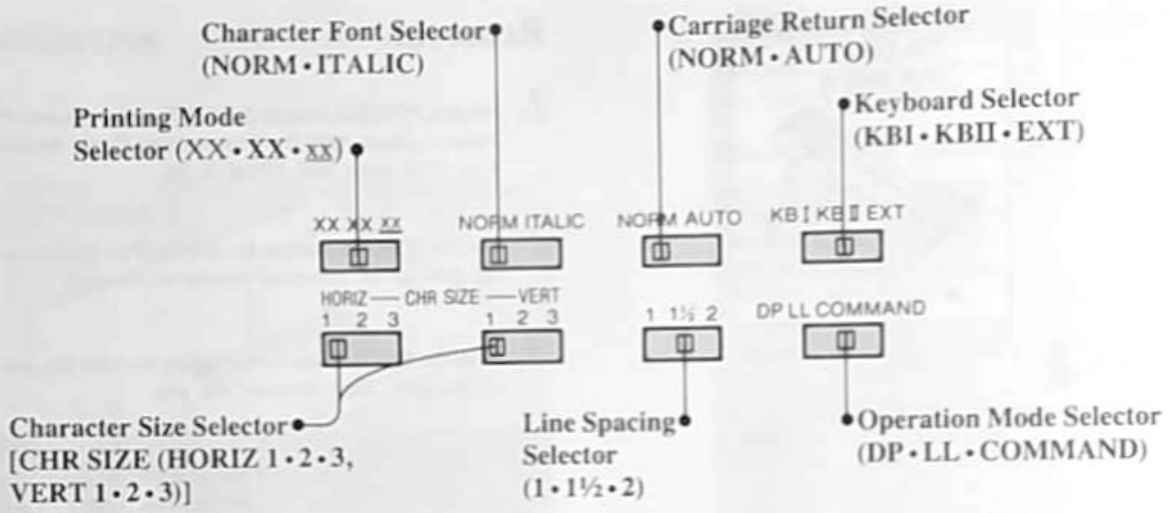


•Do not press the Pen Release Lever more than required.

4 Close the Transparent Cover.

When this unit is not used for a long time (a few days or more), remove the pens from the Pen Holder, replace the caps, put them into the Pen Case, and install the Dust Cover.

NAMES AND OPERATION OF THE SELECTORS



Operation Mode Selector

Selector Position	Operation
DP	When the keys are pressed, the respective characters will be printed immediately.
LL	When the keys are pressed, the respective characters will be displayed on the LCD Display. Characters can be added to or deleted from the LCD Display. (Refer to page 17.) Displayed characters are printed after the **RETURN** Key is pressed.
COM-MAND	The keyboard input is accepted as graphic commands and graphic processing is executed. In this mode, the commands given as input are displayed on the LCD Display. (The commands shown in the graphic command table on page 34 can be used.)

Line Spacing Selector

Selector Position	Line Feed
1	1 line
1½	1.5 lines
2	2 lines

• The line space feed amount is proportional to the vertical character size.

Character Size Selector

Horizontal Size

This selector changes the horizontal size of the characters.

Selector Position	Operation
1	Standard size, about 10 characters per inch
2	Two times the standard size
3	Three times the standard size

Vertical Size

This selector changes the vertical size of the characters.

Selector Position	Operation
1	Standard size
2	Two times the standard size
3	Three times the standard size

•The selections for the character sizes Horizontal 1, 2, 3 and Vertical 1, 2, 3 can be combined as desired.

		HORIZONTAL SIZE		
		1	2	3
VERTICAL SIZE	1	ABCDEF	ABC	AB
	2	ABCDEF	ABC	AB
	3	ABCDEF	ABC	AB

Printing Mode Selector

Selector Position	Operation
XX	Normal characters
XX	Bold characters
XX	Underlined characters

Character Font Selector

Selector Position	Operation
NORM	Normal characters (Courier)
ITALIC	Italic characters

Carriage Return Selector

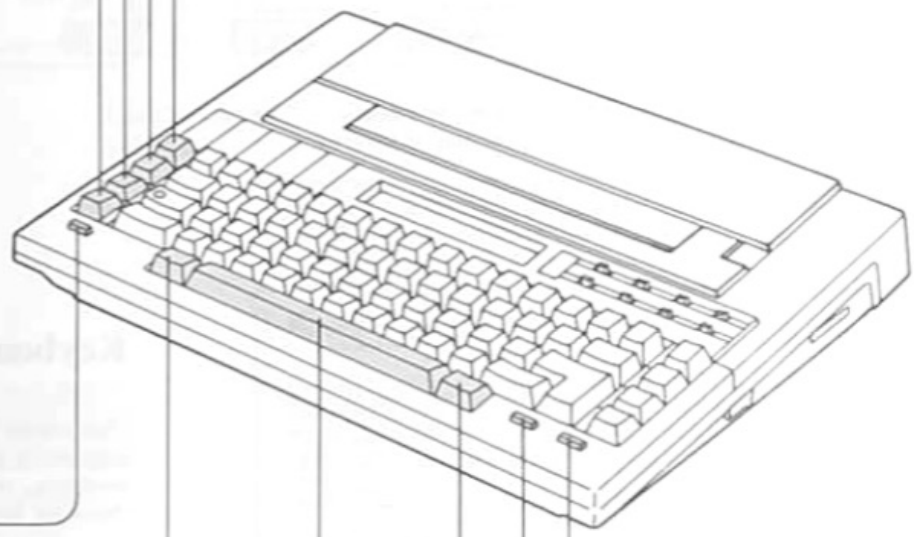
Selector Position	Operation
NORM	Printing stops at the right margin.
AUTO	When a "hyphen" or a "space" is entered within the "Hot zone" (refer to page 18), the carriage automatically returns to the left margin of the next line.

Keyboard Selector

This selects the character set you want to use.
Depending on the position of this selector and the shift condition, two to four characters can be typed with one character key.

Selector Position	Operation
KBI	The left character on the key top will be printed.
KBII	The right character on the key top will be printed.
EXT	Use as a printer. (Refer to page 40.)

NAMES AND OPERATION OF THE FUNCTION KEYS



Tab Set Key (TAB SET)
(Refer to page 19.)

Right Margin Set Key (R MAR)
(Refer to page 18.)

Left Margin Set Key (L MAR)
(Refer to page 18.)

Tab Clear Key (TAB CLR)
(Refer to page 19.)

Paper Insert Key (PAPER INSERT)
When this key is pressed after the paper has been placed all the way into the Paper Insertion Slot, the paper will be inserted automatically.

Repeat Key (REPEAT)
The operation of the key pressed immediately before this key will be repeated. (Refer to page 14.)

Index Key [INDEX (▼)]
Moves the paper forward one half line (depending on the vertical character size).

Space Bar
The carriage will move one space to the right.

Reverse Index Key [REV INDEX (▲)]
Moves the paper backward one half line (depending on the vertical character size).

Code Key (CODE)
This key is used in combination with other keys for execution of special functions. (Refer to page 15.)

Tab Key (TAB)
The carriage will move to the next tab position. (Refer to page 19.)

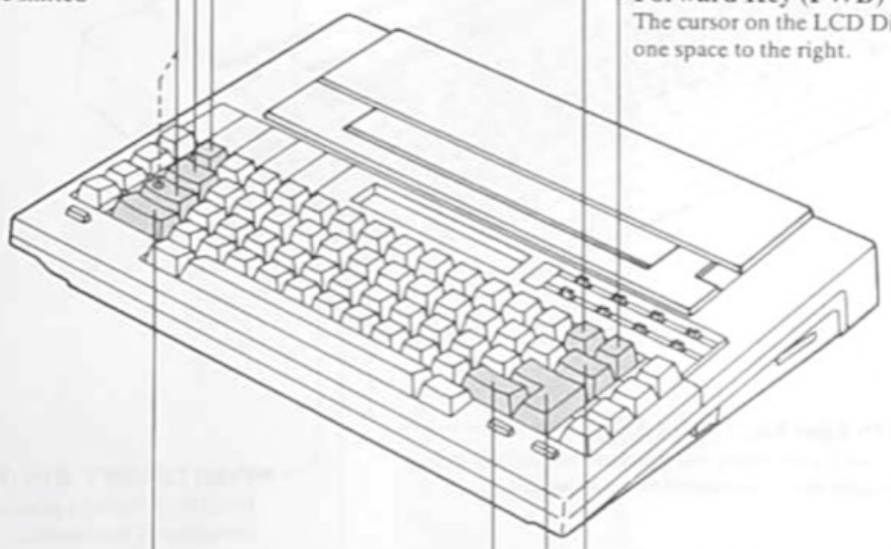
Margin Release Key (MAR REL)
The left or right margin will be released temporarily. (Refer to page 18.)

Shift Lock Key and Shift Indicator (LOCK)
Press this key for continuous typing of capital letters or the symbols shown at the upper part of the keys. Press the **SHIFT** Key to cancel the shift lock.

- **Shift Indicator**
  This indicator lights in the shifted condition.

Back Space Key (BACK SPACE)
The carriage or the cursor on the LCD Display will move one space to the left.

Forward Key (FWD)
The cursor on the LCD Display will move one space to the right.

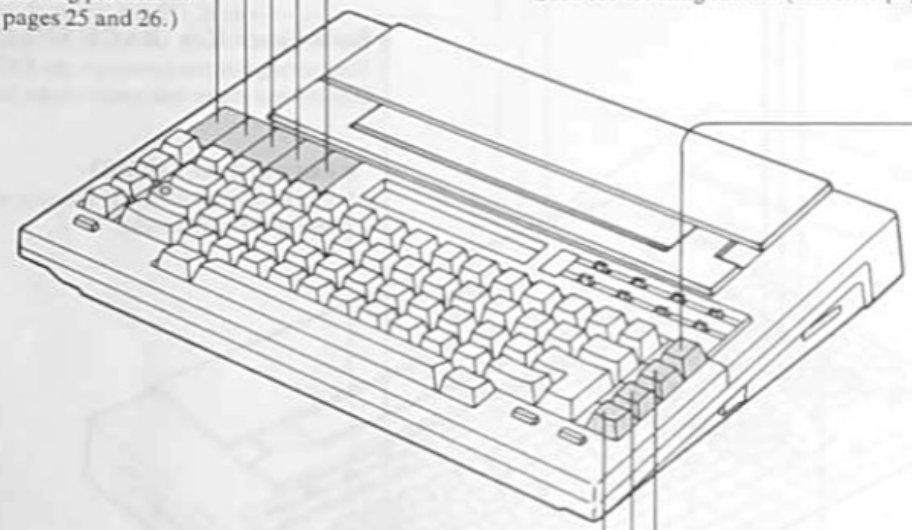


Shift Key (SHIFT)
When a character key is pressed while this key is being pressed, the capital letter or the symbol shown at the upper part of the key will be printed.

Shift Key (SHIFT)

Delete Key (⌫)
This key is used to delete printed characters or characters on the LCD Display.

Return Key (RETURN)
The carriage moves to the left margin position of the next line.



Bar Graph Key
Used for drawing bar graphs. (Refer to page 26.)

Line Graph Key
Used for drawing line graphs. (Refer to page 26.)

Radar Chart Key
Used for drawing radar charts. (Refer to page 27.)

Pie Chart Key
Used for drawing pie charts. (Refer to pages 25 and 26.)

Column Layout Key (COLUMN LAYOUT)
Used for creating tables. (Refer to pages 27 and 28.)

Mode IN/OUT Key (MODE IN/OUT)
Used for entering the text memory mode or exiting the text memory, graph, column layout, centering or vertical printing mode. This key can also be used to terminate the drawing of a graph.

ON Line Key (ON LINE)
Used for switching between on line and off line modes when connected to a computer.

Print ON/OFF Key (PRINT ON/OFF)
Used for printing a graph or stored text and to temporarily intermediate terminate text memory printing.

Centering Key (CENTER)
Used for centering characters between the left and right margins or between tabs.

Repeat Functions

The following keys have a repeat function when they are continuously pressed.

- Space Bar
- BACK SPACE Key
- FWD Key
- RETURN Key
- INDEX Key
- REV INDEX Key

Key repetition is also possible for the following keys by pressing the REPEAT Key after the respective key.

- Character keys (except for the Dead Keys)
- Space Bar
- BACK SPACE Key
- FWD Key
- RETURN Key
- ⌫ Key
- TAB Key
- INDEX Key
- REV INDEX Key

Dead Keys

Since the five accent symbols (` ´ ^ ¨ ~) are used together with other characters, the carriage does not move after these symbols are printed.

CODE KEY FUNCTIONS

The **CODE** Key is used in combination with other keys to modify their function.
Make sure that the **CODE** Key is held down when pressing other combination keys.

CODE + TAB CLR
Clear all tabs

CODE + ⌫ CLEAR
Correction (Refer to page 20.)

CODE + Space Bar
Permanent space

CODE + −± - Fr
Permanent hyphen

CODE + R
Right margin flush (Refer to page 21.)

CODE + V VERTICAL
Vertical print (Refer to page 22.)

CODE + FWD
CODE + BACK SPACE
CODE + INDEX ▼
CODE + REV INDEX ▲

Refer to the item "OVERLAY PRINTING" on page 23.

CODE + ⌫ CLEAR
CODE + H HATCH
CODE + C COLOR

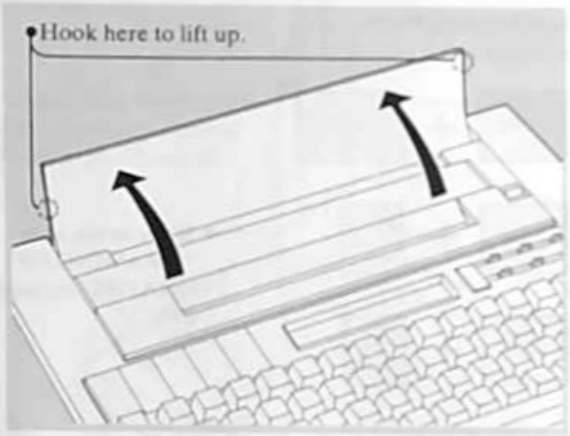
Refer to the item "DRAWING OF GRAPHS" on pages 24 to 27.

CODE + M QUANTITY
CODE + S SEARCH
CODE + ⌫ CLEAR
CODE + BACK SPACE
CODE + FWD
CODE + RETURN

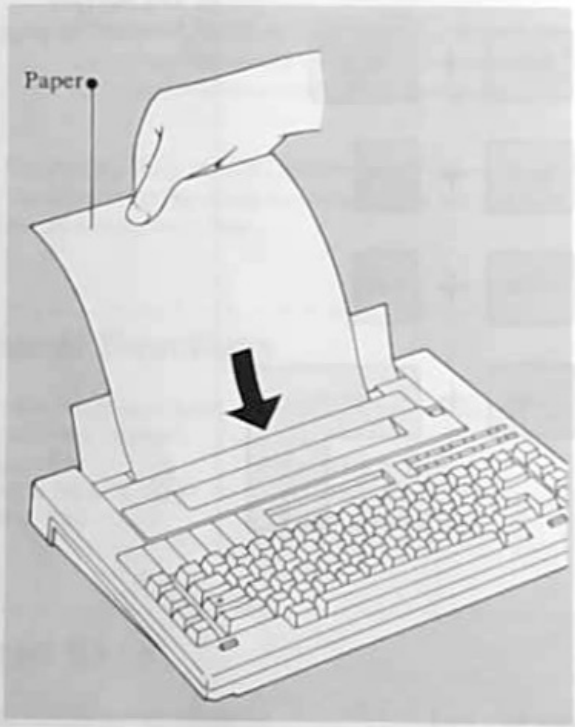
Refer to the item "Function Keys Used with the Text Memory" on page 29.

PAPER INSERTION

1 Lift up the Paper Support.



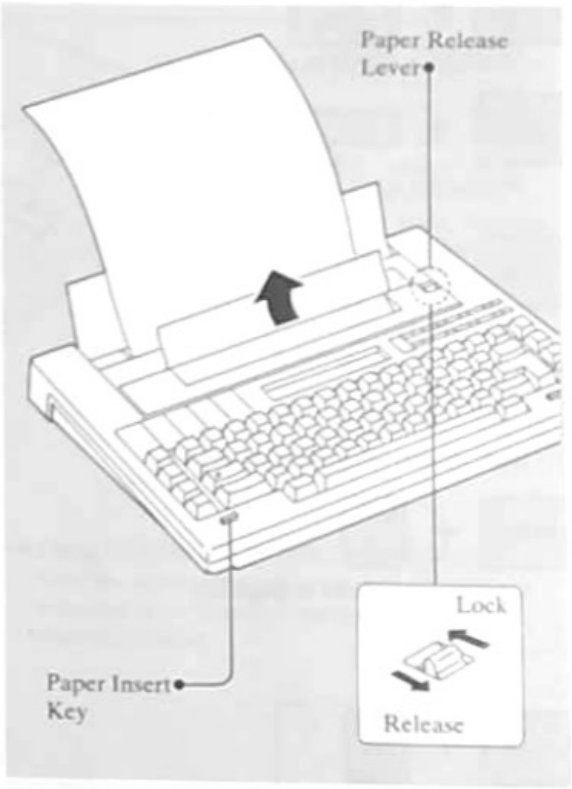
2 Check that the Paper Release Lever is in the locked position.
Set the **POWER** Switch to "ON" and insert the paper all the way into the Paper Insertion Slot.
When using small size paper, put the paper into the center of the Paper Insertion Slot.
Do not use less than 3" width paper.



3 Hold the paper with one hand and press the **PAPER INSERT** Key.
The paper will be inserted automatically.

- Automatic paper insertion works in DP, LL, COMMAND and EXT off line modes.

If the **PAPER INSERT** Key is not accepted, press the **RETURN** Key and then press the **PAPER INSERT** Key again.



- Pull the Paper Release Lever to adjust the paper position, then return it to its locked position.

We recommend 8½" letter size paper for use in this unit. When using narrower paper, avoid the thick and glossy types.

TYPING MODE

DP and LL modes can be selected with the **Operation Mode** Selector.

Direct Print (DP) Mode

The entered characters will be printed immediately. Margin and tab settings are executed in this mode.

Line by Line (LL) Mode

The entered characters are displayed on the LCD Display and correction may also be performed on the LCD Display before printing.
When the **RETURN** or the **TAB** key is pressed, or when the **Operation Mode** Selector is switched from "LL" to "DP", all characters displayed on the LCD Display will be printed. However, when the character size, font or type is changed or when the **COLOR** Button is pressed, the characters to the left of the cursor will be printed in the condition before changing.

•Display operation

The cursor moves one space to the left.

The cursor moves one space to the right.

The character on the cursor will be deleted.

•Combinations with the Accent Symbols (Dead Keys)

When a key other than the combinations shown in the table is pressed after a Dead Key, the accent symbol will disappear and only the pressed key will be displayed.

äëïöü	AEIOU
áéíóú	AEIOU
àèìòù	AEIOU
âêîôû	AEIOU
ãõñ	AON

•The Editing (Insertion, Deletion and Correction) on the LCD Display

The explanations will be given for the case when "Panasonic typewriter" has been entered and then it is decided to change "typewriter" to "Typewriter".

1 Enter P a n a s o n i c SPACE t y p e w r i t e r

Panasonic typewriter_

Cursor

2 Press the **BACK SPACE** Key 10 times to bring the cursor under the letter "t".

Panasonic typewriter

3 Press the ⌫ Key to delete the letter "t".

Panasonic_ypewriter

4 Press the **FWD** Key to bring the cursor underneath the letter "y".

Panasonic ypewriter

5 Press the **T** Key while holding the **SHIFT** Key down to insert the letter "T".

Panasonic Typewriter

In LL mode, the following keys do not work.
L MAR, R MAR, MAR REL, TAB SET, TAB CLR, CENTER.

MARGINS

Setting

When the **L MAR** or the **R MAR** Key is pressed after the carriage has been moved to the desired position, the previous margin will be released and a new margin will be set.

1 Set the **Operation Mode** Selector to "DP".

2 Move the carriage to the desired left or right margin position by pressing the **BACK SPACE** Key or the **Space** Bar.

3 Press the **L MAR** or the **R MAR** Key to set the margin at this new position.

When the carriage stops at the previously set margin, press the **MAR REL** Key and move the carriage to the desired position.

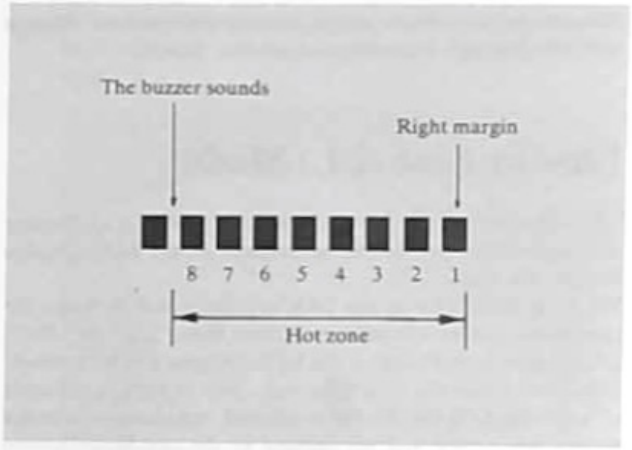
Right Margin Release

When the carriage reaches the right margin, the buzzer sounds and the keys lock.
The keys can be released in one of the following ways:

- Press the **RETURN** Key to move the carriage to the left margin of the next line.
- Press the **MAR REL** Key to continue typing on the same line.

Hot zone

Eight spaces preceding the right margin, independent of the horizontal character size, are called the "Hot zone". When the carriage enters the hot zone, a buzzer sounds to indicate that only another 8 characters can be typed.



TABULATION

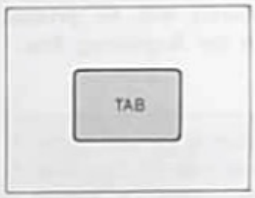
Tab Setting

1 Set the **Operation Mode** Selector to "DP" and then move the carriage to the position where the tab is to be set using the **Space** Bar and **BACK SPACE** Key.

2 Press the **TAB SET** Key.
- A maximum of 16 tabs may be set. If setting a 17th tab is attempted, the buzzer will sound to indicate that the tab setting cannot be accepted.

Tabs cannot be set in the text memory mode.

Tab Operation



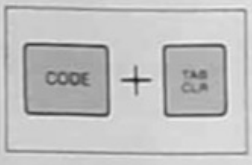
When the **TAB** Key is pressed, the carriage moves to the next set tab or to the right margin.
- In the LL mode, the above operation will be executed after the characters entered up to that time have been printed.

Tab Clearing

1 Set the **Operation Mode** Selector to "DP" and then use the **TAB** Key to bring the carriage to the position of the tab to be cleared.

2 Press the **TAB CLR** Key.

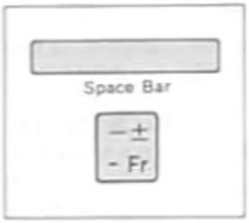
Clearing All Tabs



Press the **TAB CLR** Key while holding the **CODE** Key down in DP mode.

AUTOMATIC CARRIAGE RETURN

1 Set the **Carriage Return** Selector to "AUTO".



2 When a space or a hyphen is entered inside the "Hot zone" (in DP or LL mode), the carriage will return automatically to the margin of the next line.
Typing can therefore be performed without concern for the right margin.

Automatic carriage return will not be executed when the right margin has been reached and printing no longer is possible.
At this time, press the **MAR REL** Key and enter a space or a hyphen to return the carriage.

Permanent Hyphen and Space

This function allows you to type a hyphen or space in the "Hot zone" and continue typing without the carriage return in the automatic carriage return mode.

...Permanent space

...Permanent hyphen

- Permanent spaces are displayed as "␣" on the LCD Display.

CORRECTION

Install the Correction Pen Set as described in "PEN INSTALLATION AND REMOVAL" (refer to pages 8 and 9 according to the Color Indication).

Automatic Correction

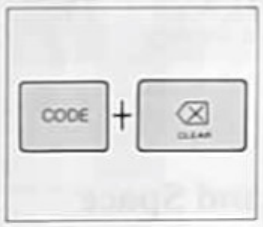
Before the **RETURN** Key is pressed, the characters on that line can be deleted automatically.

1 Use the **BACK SPACE**, **TAB** Key or the **Space** Bar, to bring the carriage to the left of the character to be deleted.

- For example, when "W" below is to be deleted:

ABCDWFG

Carriage position ●



2 Press the ⌫ Key while holding the **CODE** Key down. The Pen Holder will turn automatically, and the character will be deleted with the Erasing Pen.

- When the **REPEAT** Key is pressed after automatic deletion, the carriage will move from the right to the left while automatically deleting the characters of that line one after the other.

3 Type the correct characters. The Pen Holder will turn automatically and the characters will be printed with the Reprinting Pen.

Manual Correction

When an error is noticed after the **RETURN** Key has been pressed, or when automatic deletion is not possible because of superimposed characters, manual correction must be used.

1 Since the correction memory is cleared when the **RETURN** Key is pressed, press the **REV INDEX** Key to position the carriage on the line where the correction is to be made.

2 Use the **BACK SPACE** Key, the **Space** Bar or the **TAB** Key to bring the carriage to the left of the character to be deleted.

3 Match the character size, font, and printing mode to the characters to be deleted.

4 Press the ⌫ Key while holding the **CODE** Key down. Then press the key for the character to be deleted. The Pen Holder will turn automatically and the character will be deleted with the Erasing Pen.

5 Type the correct characters. The Pen Holder will turn automatically and each character will be printed with the Reprinting Pen.

- Directly after printing a character at the end of the line, the carriage will move back and the character will be deleted automatically when the ⌫ Key is pressed while the **CODE** Key is held down.
- Characters printed with a pen other than the Correctable Pen or with the Reprinting Pen cannot be deleted.
- Automatic correction of characters printed in Overlay, Centering, Text Print, or LL Mode is not possible.
- Automatic correction does not operate after Index or Rev. Index has been performed.
- The erasing pen's cap must be in place when not in use, or the ink will dry up, and this will depend on the temperature and humidity of the erasing pen's environment along with the length of time the cap has been off.
- Depending on the type of paper used, the characters may not appear to be totally deleted.
- If the paper with the corrected characters has been kept in a room with high humidity (more than 70% RH), the deleted characters may have a yellow discolored appearance.
- If the erasing ink has not dried completely and characters are retyped over that area, the characters may not be printed clearly.

CENTERING

Centering operation will be performed from the position at which the centering mode is entered.

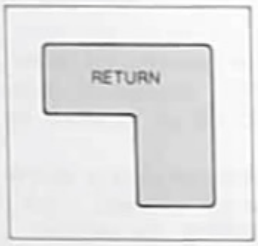
- When the carriage is on the left margin, centering will be performed between the left and the right margins.
- When the carriage is on a tab, centering will be performed between that tab and the next one.
- At the last tab, centering will be performed between the tab and the right margin.
- Centering is possible in DP mode.

1 Press the **CENTER** Key. The carriage will move to the centering position, and the following message will be displayed on the LCD Display.

L-R MARGIN CENTERING

TAB CENTERING

2 Enter the words or the sentences to be centered.



3 Press the **RETURN** Key. Centered printing will be performed and the carriage will return to the left margin of the next line.
When a line feed is not desired, press the **TAB** Key to move the carriage to the next tab or to the right margin.

- When the text exceeds the tab or the margins, or when it overlaps already printed characters, the buzzer will sound and further input will not be possible.
- When the **MODE IN/OUT** Key is pressed, the centering mode will be cancelled.
- When one of the following selectors is switched after the text has been entered in the centering mode, the text will be printed.
  - **Operation Mode**
  - **Character Size**
  - **Character Font**
  - **Printing Mode**

RIGHT MARGIN FLUSH

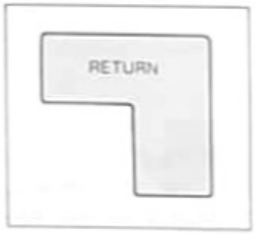
This function is used for printing of dates, etc. where it is desired that the words or sentences be printed aligned flush with the right margin.

- Right margin flush is possible in DP mode.

1 Press the **R** Key while holding the **CODE** Key down. The carriage will move to the right margin and the following message will be displayed on the LCD Display.

RIGHT MARGIN FLUSH

2 Enter the words or sentences to be printed.



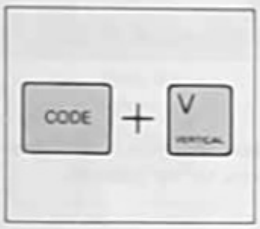
3 Press the **RETURN** Key. The characters will be printed with the last character on the right margin. The carriage will then return to the left margin of the next line.

- When the text exceeds the left margin or when it overlaps already printed characters, the buzzer will sound and further input will not be possible.
- When the **MODE IN/OUT** Key is pressed, the right margin flush mode will be cancelled.
- When one of the following selectors is switched after the text has been entered in the right margin flush mode, the text will be printed.
  - **Operation Mode**
  - **Character Size**
  - **Character Font**
  - **Printing Mode**

VERTICAL PRINTING

The vertical printing mode can be selected by pressing the **V** Key while the **CODE** Key is held down in DP or LL mode.

1 Move the carriage to the bottom of the paper which will be the left margin in the vertical printing mode.



2 Press the **V** Key while the **CODE** Key is held down. The one of following messages will be displayed.

V-DIRECT PRINTING MODE

V-LINE BY LINE MODE

3 Before typing the any characters, use the **INDEX**, **REV INDEX** or the **RETURN** Key to move the carriage to the desired printing position.

4 Depending on the desired printing mode, the characters typed will be printed vartically.

5 Press the **MODE IN/OUT** Key to exit the vertical printing mode.

- Margin setting or tab setting is not possible.
- 100 standard size characters can be printed between the preset margins.
- Use the **Space** Bar and **BACK SPACE** Key to move the paper up and down.
- To select any carriage printing position in the LL mode any characters displayed on the LCD must be cleared first.

Example:

OVERLAY PRINTING

Overlaying characters can be printed using the following four functions.

•Overlay printing is possible in DP mode.

1 Step Forward

1 Step Back Space

1 Step Index

1 Step Reverse Index

•1 step is 0.2 mm (approx. 1/128").

Display

When the operation for 1 Step Forward or 1 Step Back Space is executed, "OVERLAY PRINTING MODE" will be displayed on the LCD Display.

•With 12 steps forward or backspace (the number of steps for 1 character for a horizontal character size of 1), "OVERLAY PRINTING MODE" will change to "DIRECT PRINTING MODE".

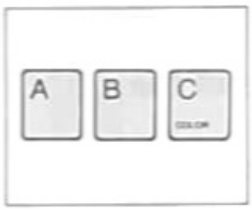
Cancellation

Press the **RETURN** or the **TAB** Key to cancel the overlay printing mode.

Use manual deletion for deleting characters printed by overlay printing. Use 1 Step Forward, 1 Step Back Space, etc. to position the carriage to the character to be deleted, and then delete manually.

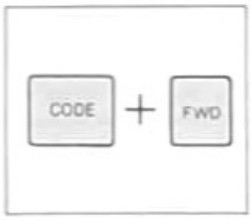
Printing

Horizontal overlaying characters

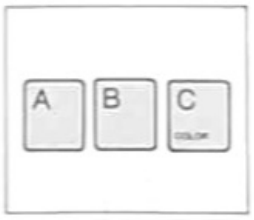


1 Enter the characters to be printed.

2 Press the **BACK SPACE** Key to return the carriage three spaces.



3 While holding the **CODE** Key down, press the **FWD** Key for the desired number of steps.



4 Enter the characters to be printed.

Example:

1 step forward	2 steps forward	3 steps forward
abc	abc	abc

•Vertical overlaying characters are also possible.

DRAWING OF GRAPHS

This unit can draw 4 general types of graph (pie chart, bar graph, line graph, radar chart) in 4 colors by entering the data in response to the "prompts" on the display.

- Install the Ball-Point Pen Set (4 Colors) as described in "PEN INSTALLATION AND REMOVAL" (refer to pages 8 and 9 according to the Color Indication).

Main Characteristics of the Graphic Packages

- Comparative graph capability (bar graph, line graph, radar chart).
- Up to 12 sets of data can be entered for each four groups.
- Graph conversion from one type to another.
- Graph trace function.
- 3 graph sizes.
- Selective hatching and color.
- Automatic scaling function.

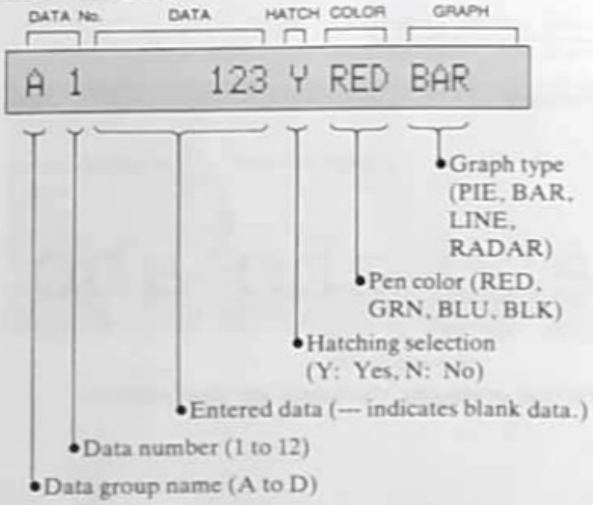
Maximum Graph Sizes

Graph size	Pie chart Radar chart	Bar graph Line graph
L	Approx. 4"×4"	Approx. 6"×4"
M	Approx. 3"×3"	Approx. 4"×3"
S	Approx. 2"×2"	Approx. 3"×2"

(Refer to page 46.)

Data Input

LCD Display



1 Numerical values are entered as data by pressing the **RETURN** Key.

- Do not forget to press the **RETURN** Key. If the **RETURN** Key is not pressed, the entered numerical value will be displayed, but will not be accepted as data.
- Before the **RETURN** Key is pressed, clearing with the ⌫ Key is possible for renewed data input.

2 Enter the other data.

- Input is possible for data with up to 8 digits (0.000001 to 99999999).
- Up to 12 sets of data can be handled in one group, and up to 4 groups can be handled in case of comparative graph.
- When the 12th datum is entered and the **RETURN** Key is pressed, "DATA END!!" will be displayed.

DATA END !! BAR

- The data can be confirmed by the **INDEX** and the **REV INDEX** Keys.

INDEX ...The data number is increased.

REV INDEX ...The data number is reduced.

Data deletion

Use the **INDEX** and the **REV INDEX** Keys to display the data to be deleted, and then press the ⌫ Key.

- When all data are to be cleared, press the ⌫ Key while holding the **CODE** Key down.

Data correction

Use the **INDEX** and the **REV INDEX** Keys to display the data to be corrected, press the ⌫ Key to delete the old data, input the new data and press the **RETURN** Key.

- Pressing the **C** Key while holding the **CODE** Key down will cause the color to change, in the sequence of RED (red)→GRN (green)→BLU (blue)→BLK (black)→RED (red).

- When drawing pie charts and bar graphs, hatching or no hatching can be selected.
  Each time the **H** Key is pressed while the **CODE** Key is held down, the setting is reversed and "Y" or "N" is displayed on the LCD Display.

  Y (Yes)...Hatching will be performed.
  N (No)...No hatching will be performed.

- The data are stored separately for non-comparative data (12 sets of data) and comparative data (12 sets of data×4 groups).
  Since the data remain stored even after the graph is drawn, the same data can be used for drawing different graphs.
- This unit has a built-in test pattern, "DEMONSTRATION" which is executed when the **POWER** Switch is switched ON while the **SHIFT** Key is held down. Please note that all graph data will be deleted at this time.

Exit the Graph Mode

Press the **MODE IN/OUT** Key.

- It is possible to exit the graph mode while drawing a graph. It will automatically exit the graph mode after graph drawing.

- Use letter-size paper (width 8¼" to 8½").
- The graph keys will be accepted in DP or in LL mode. The graph keys will not be accepted in EXT mode and in Command mode.
- Graph trace indicates the size for drawing the 12 sets of data. In the case of bar graph and line graph, the graph width will be adjusted automatically according to the number of data (refer to page 46).
- Color designation is possible for each group of a bar graph, line graph and radar chart.

Pie Chart

1 Press the **Pie Chart** Key.

```
SELECT SIZE:L,M,S? PIE
```

2 Select the graph size by pressing the **L**, **M** or the **S** Key. When for example the **S** Key is pressed, the LCD Display will show:

```
S: 2"×2", MOVE PEN.PIE
```

3 Move the carriage to the top left position where the graph is to be drawn.
Use the **INDEX** or the **REV INDEX** Key to move the paper vertically.
Use the **Space** Bar or the **BACK SPACE** Key to move the carriage in a horizontal direction.
When the carriage comes to the limit of the drawing area, the buzzer will sound and the LCD Display will be visible for about 1 second.

```
SIZE OVER !! PIE
```

4 Press the **RETURN** Key.

```
GRAPH TRACE Y/N ? PIE
```

5 Press the **Y** Key to trace the range of the graph. The paper and the carriage will move to indicate the maximum range of the graph. (The graph will not be drawn.)

- If the graph trace is not required, press the **N** Key and go to Step 8.

6 After the trace, the LCD Display will show:

```
POSITION OK Y/N ? PIE
```

7 Press the **N** Key to change the position and go to Step 3.
If the position is OK, press the **Y** Key.

8 Enter the data and press the **RETURN** Key.

```
1        123 Y RED PIE
```

9 Press the **PRINT ON/OFF** Key.
The following message will be displayed on the LCD Display and drawing will begin.

```
DRAWING !!     PIE
```

Bar Graph

1 Press the **Bar Graph** Key.

```
SELECT SIZE:L,M,S? BAR
```

2 Select the graph size and position.
Perform the same operations as the pie chart (Step 2 to Step 7).

```
COMPARATIVE Y/N ? BAR
```

3 Press the **N** Key for a non comparative graph.
Enter the data and go to Step 7.

```
1        --- Y RED BAR
```

- Press the **Y** Key for a comparative graph.

```
A 1      --- Y RED BAR
```

4 Enter the data for group "A".

5 Press the **RETURN** Key after entering all of the data for group "A".

```
B 1      --- Y GRN BAR
```

- When 12 sets of data have been entered for one group, the next group will be shown automatically. (Press the **RETURN** Key to advance from one group to another.)

6 Enter the data for groups "B", "C" and "D".

7 Press the **PRINT ON/OFF** Key.

```
GRID   Y/N ?   BAR
```

8 Press the **Y** Key for a graph with a grid. Press the **N** Key for a graph without a grid.

```
DRAWING !!     BAR
```

Line Graph

The method of operation is the same as the bar graph.

Radar Chart

1 Press the **Radar Chart** Key.

SELECT SIZE:L.M.S? RADAR

2 Select the graph size and position.
Perform the same operations as the pie chart (Step 2 to Step 7).

COMPARATIVE Y/N ? RADAR

3 Determine if comparative data is to be entered.

1 --- MAX RADAR

4 Enter the maximum value of the each sector.

5 Press the **RETURN** Key again.

6 Enter all of the data. (Data input is possible only for the data number where the MAX value has been entered.)
Perform the same operations as the bar graph (Step 3 to Step 6).

7 Press the **PRINT ON/OFF** Key.

DRAWING !! RADAR

- If the input data exceed the maximum value of the sector, the data is temporarily converted to the maximum value.
- It is necessary to set more than three (3) MAX values for a radar chart, otherwise no chart will be drawn.

COLUMN LAYOUT

Operation

The column layout function allows you to frame information within boxes.

1 Set the **Operation Mode** Selector to "DP" or "LL" and the **Keyboard** Selector to "KBI" or "KBII".

2 Select the character size and line spacing.

3 Move the carriage to the position where drawing should start by pressing the Space Bar, the **BACK SPACE, INDEX** or the **REV INDEX** Key.
The start position is the top left corner of the layout on the paper.

4 Press the **COLUMN LAYOUT** Key.

COLUMN LAYOUT MODE

5 For the horizontal division of the boxes, type the longest information, press the **COLUMN LAYOUT** Key in each column and continue until all the columns have been entered. Press the **RETURN** Key and the carriage will return to the start position for drawing the horizontal line.

Example:

C O M P A N Y COLUMN LAYOUT
1 8 4 5 3 COLUMN LAYOUT
1 5 4 7 6 COLUMN LAYOUT RETURN

6 Enter the information of the first row. Press the **TAB** Key at the end of each column.
At the end of the row, press the **RETURN** Key. The carriage will return to the left position of next row.

Example:

C O M P A N Y TAB Space ' 8 3 TAB
Space ' 8 4 TAB RETURN

COMPANY	'83	'84

If there is a blank column, just press the **TAB** Key.

7 After the carriage has returned to the left position, press the **COLUMN LAYOUT** Key to draw the horizontal line.

COMPANY	'83	'84

After drawing the horizontal line, the carriage will again return to the left position.

8 Continue entering the information from the second row.

Example:
2nd row

[Space] [Space] [A] [B] [C] [TAB] [1] [8] [4] [5] [3] [TAB] [Space] [9] [0] [3] [8] [TAB] [RETURN] [COLUMN LAYOUT]

3 rd row

[Space] [Space] [X] [Y] [Z] [TAB] [Space] [9] [7] [6] [5] [TAB] [1] [5] [4] [7] [6] [TAB] [RETURN] [COLUMN LAYOUT] [COLUMN LAYOUT]

If you want a double horizontal line, press the **COLUMN LAYOUT** Key twice.

4th row

[Space] [T] [O] [T] [A] [L] [TAB] [COLUMN LAYOUT] [2] [8] [2] [1] [8] [TAB] [2] [4] [5] [1] [4] [TAB] [RETURN]

5th row

[TAB] [Space] [Space] [Sapce] [5] [2] [7] [3] [2] [TAB] [RETURN] [COLUMN LAYOUT]

The final print out should be as follows:

Example:

COMPANY	'83	'84
ABC	18453	9038
XYZ	9765	15476
TOTAL	28218	24514
	52732	

9 Press the **MODE IN/OUT** Key to exit the column layout mode.

- When the carriage is at the middle of the row and the **COLUMN LAYOUT** Key is pressed, a horizontal line will be drawn from that position to the end of the row (refer to the 4th row).
- If the information to be entered in a block exceeds the previously set maximum length (refer to the 5th row), the vertical line will be neglected.

TEXT MEMORY

The RK-P400C has a text memory which can be divided into nine.
Up to 3190 characters can be stored in this built-in memory.

Main Characteristics of the Text Memory

- 3190 characters (divided into nine) can be stored.
- The 24-Character LCD Display can be used for easy editing of the memorized text.
- The Word-Wrap function eliminates line changes in the middle of words, excessive blanks, or projecting words.
- The memorized text can be printed not only with the margins used at the time of storage, but also with any margins set at a later time.
- The quantity of the remaining memory can also be checked easily.
- A word search function which is quite helpful for editing the text is also provided.

Function Keys Used with the Text Memory

Enter and exit the text memory mode

Text printing and temporary stop

The cursor moves one space to the right

The cursor moves one space to the left

The cursor moves to the previous line

The cursor moves to the next line

The cursor moves to the end of the text

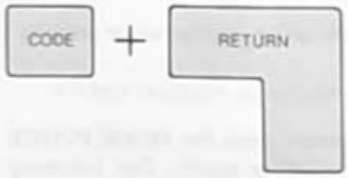
The cursor moves to the top of the text

Permanent (hard) space

Display of the remaining memory capacity

Text clear

Word search



Use for input of the return mark at the time of search word input

Tabs cannot be set in the text memory mode.

Text Entry

1 Set the left and right margins.

2 Press the **MODE IN/OUT** Key to enter the text memory mode. The following message will be displayed on the LCD Display for about 1 second.

```
TEXT MEMORY MODE
```

- Afterwards, the LCD Display will change as follows.

```
TEXT  # ?
```

3 Enter the text number (from 1 to 9, which corresponds to memory locations 1 to 9). For example, when the text number 3 is to be selected, press the **3** Key. When the following display appears on the LCD Display, it shows there is no text in the text number 3.

```
                    3◆_
```

4 Enter the text using the following outline.
- Type the text to be stored as you would on a normal typewriter. The text will appear on the LCD Display.
- Continue typing even at the end of the line without pressing the **RETURN** Key.
- Press the **RETURN** Key at the end of a paragraph for a permanent carriage return.
- The following settings are not memorized.
  1. Printing Mode
  2. Character Size
  3. Color
  4. Character Font
  5. Amount of line feed
- The above information can be selected when printing.

5 At the end of the text entry, press the **MODE IN/OUT** Key to exit the text memory mode. The following message will be displayed on the LCD Display for about 1 second.

```
TEXT MEMORY MODE END
```

6 Repeat the same procedure to enter the text into another text memory.

Text Edit

1 Press the **MODE IN/OUT** Key.

```
TEXT MEMORY MODE
TEXT  # ?
```

2 Enter the number of the text to be edited. For example, press the **5** Key to select the text number 5. The following message will be displayed on the LCD Display for about 1 second.

```
SELECT MARGIN FORMAT
```

- The following message will then be displayed.

```
1: CURRENT   2: STORED
```

3 Press the **1** Key to select the currently set margin or the **2** Key to select the margin used when the text was stored. The first part of the text will be displayed as shown below.

```
5◆The quick brown fox ju
```

- When the cursor is moved to the right or the left with the **FWD** and the **BACK SPACE** Key, the remaining contents of the memory will be displayed sequentially on the LCD Dispaly.
  Use the **REV INDEX** and the **INDEX** Keys to move up and down through the text a line at a time.
  The cursor is moved to the top or the end of the text when the **BACK SPACE** or the **FWD** Key is pressed while the **CODE** key is held down.

4 Correction method.
- Deletion of characters
  When the ⌫ Key is pressed, the character above the cursor will be deleted. The cursor will move to the left for continuous sequential deletion when the **REPEAT** Key is pressed after the ⌫ Key.
- Character insertion
  New characters will be inserted to the left of the cursor.

5 Press the **MODE IN/OUT** Key to exit the text memory mode.

Word Search

With this function, characters stored in the memory can be searched for and displayed on the LCD Display.

1 Enter the text edit mode.
Perform the same operation as described in steps 1~3 of "Text Edit" on page 30.

```
5♦The quick brown fox ju
```

2 Press the **S** Key while holding the **CODE** Key down. The following message will be displayed.

```
SEARCH WD=_
```

3 Enter the characters to be searched for. The characters (max. 10 characters) will be displayed on the LCD Display.

```
SEARCH WD=dog_
```

4 Press the **RETURN** Key.
Searching will start from the cursor position to the end of the text.

- When the characters are found, the display will show the following.

```
◀jumps over the lazy dog
```

- If the characters are not in the memory, the following message will appear.

```
NOT FOUND !!
```

- When the same characters exist several times in the memory, the first one found will be displayed.

- When the word search function is used, the word searched for previously will be displayed, so that continuous search for the same word is possible without re-typing. When a different word is to be searched for, delete the displayed word and then enter the new word.

- When searching for a word or words which include the RETURN mark, press the **RETURN** Key while holding the **CODE** Key down to input the RETURN mark.

```
SEARCH WD=dog↵_
```

Text Clear

1 Press the **MODE IN/OUT** Key.

```
TEXT MEMORY MODE
TEXT  # ?
```

2 Enter the number of the text memory which is to be deleted. (For example, press the **3** Key)

```
SELECT MARGIN FORMAT
1: CURRENT   2: STORED
```

3 Press the **1** or the **2** Key. The contents will be displayed as shown below.

```
3♦The quick brown fox ju
```

4 Press the ⌫ Key while holding the **CODE** Key down. The following confirmation message will be displayed.

```
DELETE TEXT #3 : Y/N ?
```

5 Press the **Y** Key to completely delete the text number 3. The display will change as follows.

```
                    3♦_
```

- When deletion is not desired, press the **N** Key.

6 Press the **MODE IN/OUT** Key to exit the text memory mode.

Text Print

1 Set the following items.
- **Color**
- **Character Size**
- **Printing Mode**
- **Character Font**
- **Left and right margins**
  Set the margins to the desired printing width. The distance between the left and the right margins must be longer than the longest word in the memory.
- **Carriage position**
  Set the position for start of printing.

2 Press the **MODE IN/OUT** Key.

```
TEXT MEMORY MODE
TEXT  # ?
```

3 Enter the text number to be printed.

```
SELECT MARGIN FORMAT
1: CURRENT   2: STORED
```

4 When printing is to be performed within the margins currently set in the step 1, press the **1** Key.
When printing is to be executed within the margins set at the time the text was stored, press the **2** Key.
The first part of the selected text memory will then be displayed.
The **REV INDEX** and the **INDEX** Keys can be used for checking the text line by line.

- When "2: STORED" is selected, the carriage moves to the left margin which was set when the text was stored.

5 Press the **PRINT ON/OFF** Key, to begin printing. When "1: CURRENT" is selected in step 4, printing will be performed from the position of the carriage. When "2: STORED" is selected, printing will be performed from the left margin which was set when the text was stored.

6 To stop the printing temporarily, press the **PRINT ON/OFF** Key. Printing will stop after completion of the word being printed at that time. When the **PRINT ON/OFF** Key is pressed again, printing will resume. The printing mode, character size, font and color can be changed during a temporary stop.
The printing can be interrupted as often as required.

7 After the entire memory contents have been printed, this unit will automatically exit the text memory mode. To end the printing at an intermediate point, press the **MODE IN/OUT** Key during the temporary stop.

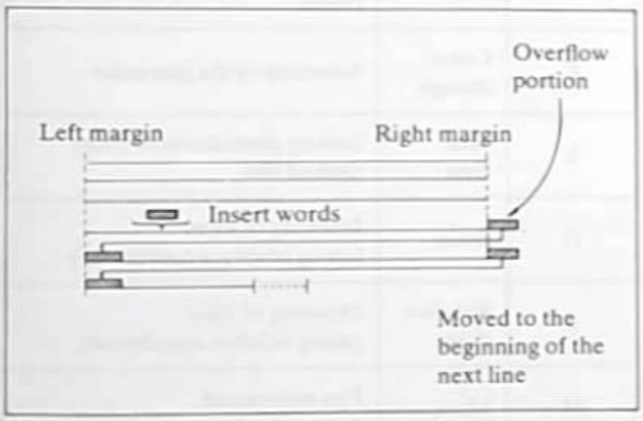
Check of Remaining Memory

Press the **M** Key while holding the **CODE** Key down in the text editing. The amount of space left in the memory will be indicated as follows:

```
MEMORY 1234 CHR. LEFT
```

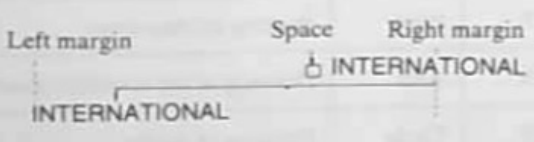
Word-Wrap

Word-Wrap means that a word exceeding the right margin will be shifted automatically to the beginning of the next line.



This function works at the space before the last word which would overflow the right margin. After the insertion of a new word, the last word will be moved to the beginning of the next line.
Word-Wrap will occur within the sentences of each paragraph.

Example:



- Spaces cannot be entered at the beginning of a line except at the top of the paragraph (just after entering the return or at the beginning of a text).
- The Word-Wrap function is executed so as to prevent a line change within a word at the time of printing. When a permanent carriage return is stored in the memory (indicated as " ↵ " on the LCD), a carriage return will always be executed at that position. Even at a hyphen "–" or at a permanent space (indicated as " ␣ " on the LCD) by pressing the **Space** Bar while holding the **CODE** Key down, they will not be judged as a point for a carriage return.
- Printing corresponding to input from the keyboard is possible during a temporary stop. When the **PRINT ON/OFF** Key is pressed afterward, printing of the memory contents will be resumed. But when the printing stops temporarily, the following functions cannot be accepted: vertical print, graphs.
- If there is no space to enter the text, the following message will appear.

```
MEMORY FULL !!
```

USE IN COMMAND MODE

When the **Operation Mode** Selector is set to "COMMAND", the keys which are pressed will be accepted as graphic commands and graphic processing will be executed.

- When switched to "COMMAND" mode, the initial condition is as follows:

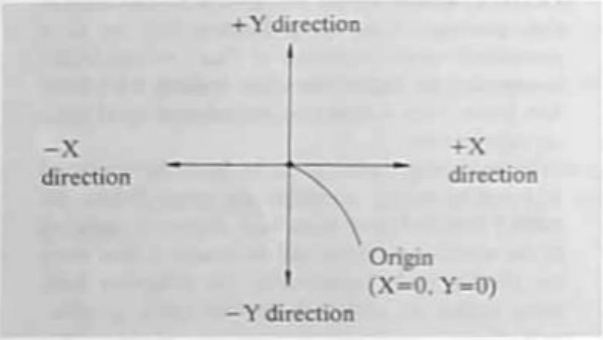
Character size	The size set by the **Character Size** Selector on the keyboard before switching to "COMMAND".
Color	The color set before switching to "COMMAND".
Line type	Solid line.
Character rotation	Upward condition.

- The following items differ directly after power "ON":

Character size	The standard character size is independent of the setting of the **Character Size** Selector.
Color	Black

Coordinate System

- Plus and minus for data indicating X and Y directions are as shown.



The numbers of the input data indicating the distance show the number of steps. (1 inch=127 steps)

- The pen can actually move 960 steps. The virtual range where the pen does not move but where coordinate data exist is as shown below.

Table of the Graphic Commands

The following 13 types of commands can be used.

Command	Name	Function
I	Initialize	Setting of the origin
H	Home	Pen movement to the origin
C	Color change	Selection of the pen color
L	Line type	Setting continuous or short dashed line
D	Draw	Drawing of lines (using absolute coordinate)
J	Relative draw	Drawing of lines (using relative coordinate)
M	Move	Pen movement (using absolute coordinate)
R	Relative move	Pen movement (using relative coordinate)
S	Size set	Setting of the character size
Q	Charac-ter rotate	Setting of the direction of characters
P	Print	Printing of characters
X	Axis	Drawing of the coordinate axes
Y	Circle	Drawing of circles

Command and Data Reading

Data is read in the following sequence:

- Capital letters or small letters may be used for commands.
- A hyphen "-" will be regarded as indicating a negative number.
- A comma "," must be placed at the end of each datum.
- Press the **RETURN** Key at the end of each command.
- Two or more commands can be entered by separating each command with a colon ":".

The following examples perform the same.

Example 1
C1 ↵
Pabc ↵

Example 2
C1: Pabc ↵

Commands whose setting conditions are influenced by other commands

At the time of operation command execution, each operation will be performed according to the condition setting commands in the following table.

	Condition setting command	Operation command
Coordinates	Initialize (I)	Home (H) Draw (D) Move (M)
Straight lines	Line type (L)	Print (P) Draw (D) Relative draw (J) Axis (X)
Characters	Size set (S) Character rotate (Q)	Print (P)
Color	Color change (C)	Draw (D) Relative draw (J) Axis (X) Print (P) Circle (Y)

COMMAND EXPLANATIONS

Initialize

I

The present position of the pen is set as the origin (X=0, Y=0).

- However, when the pen is in the virtual range, the corresponding virtual position becomes the origin.

Home

H

Movement with the pen up to the origin (X=0, Y=0).

Color Change

Cn

(n=0~3)

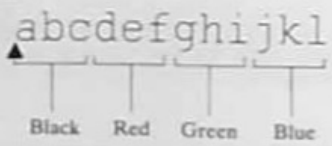
The color is selected with the color number n.

n=0 Black
n=1 Red
n=2 Green
n=3 Blue

Example:

↵ = RETURN Key
▲ = Start Point

C0: Pabc ↵
C1: Pdef ↵
C2: Pghi ↵
C3: Pjkl ↵



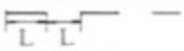
Line type

Lp

(p=0~15)

A continuous line or a line of dashes is selected for drawing by the D or J command. In the case of a line of dashes, the step is indicated.

L0: Continuous line
L1 to 15: Short dashed line



L=p+1 Steps

Example:

I ↵ (Input with the pen at the "▲" position)
L0:D250,0 ↵
H ↵
M0,−50 ↵
L10: J200,0 ↵

Draw

Dx₁, y₁, x₂, y₂ . . . . xₙ, yₙ

(x, y=−999~+999)

From the present position of the pen, a line will be drawn via the coordinates (x_n, y_n).

Example:

I ↵ (Input with the pen at the "▲" position)
D250,0,250,−150,0,0 ↵

Relative draw

$Jx_1, y_1, x_2, y_2 \ldots \ldots x_n, y_n$

(x, y = −999 ~ +999)

Lines will be drawn in sequence from the present position of the pen to the relative position indicated by x and y.

Example:

J150,0,0,−150,−150,0,0,150 ↵

Move

Mx, y

(x, y = −999 ~ +999)

Pen movement with the pen up will be executed to the point indicated by the distance of x and y from the origin.

Example:

I ↵ (Input with the pen at the "▲" position)
J100,0 ↵
M0,−50 ↵
J100,0,0,−100,−100,0,0,100 ↵

Relative move

Rx, y

(x, y = −999 ~ +999)

Pen movement with the pen up will be executed from the present position of the pen to the relative position indicated by x and y.

Example:

J200,0 ↵
R−200,−10 ↵
J150,0 ↵
R−150,−10 ↵
J100,0 ↵

Character size set

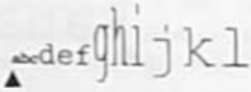
Sx, y

(x, y = 0~3)

The character size is designated. Standard, double, and triple size can be obtained in the x and y directions as desired.
When size 0 is designated (S0, 0), characters one half the size of Standard can be printed, but the ratio between horizontal and vertical direction cannot be changed. (When the size is 0 for x or y, S0, 0 will be assumed, S0, 3=S0,0).

Example:

S0,0 ↵
Pabc ↵
S1,1 ↵
Pdef ↵
S1,3 ↵
Pghi ↵
S2,2 ↵
Pjkl ↵



Character rotate

Qn

(n=0~3)

The character direction at the time the character is printed (using the P command) is set.

Example: ␣ =Space

Q0: PABCD ␣ ⏎
Q1: PEFGH ␣ ⏎
Q2: PIJKL ␣ ⏎
Q3: PMNOP ␣ ⏎

Print

Pc₁ c₂ c₃...cₙ

The character C_1, C_2, C_3... C_n are printed.
In the P command mode, a colon ":" is not accepted as a command delimiter.

Example:

S2,2 ⏎
P Panasonic ⏎

Panasonic

Axis

Xp, q, r

(q×r≦960, q≦999, r≦255)

The coordinate axes are drawn with the present position of the pen as the origin.
p=0: Y axis p=1: X axis
q: Scale step (drawing in the minus direction for negative numbers)
r: Number of repetitions

Example:

I ⏎ (Input with the pen at the "▲" position")
X1,30,10 ⏎
H ⏎
X0,40,4 ⏎
H ⏎

Circle

Yr

(r=1~254)

A circle with radius r will be drawn with the present position of the pen as the center. Circles are always drawn with continuous lines, independent of the L command.
After a circle has been drawn, the line type is set to a continuous line.

Example:

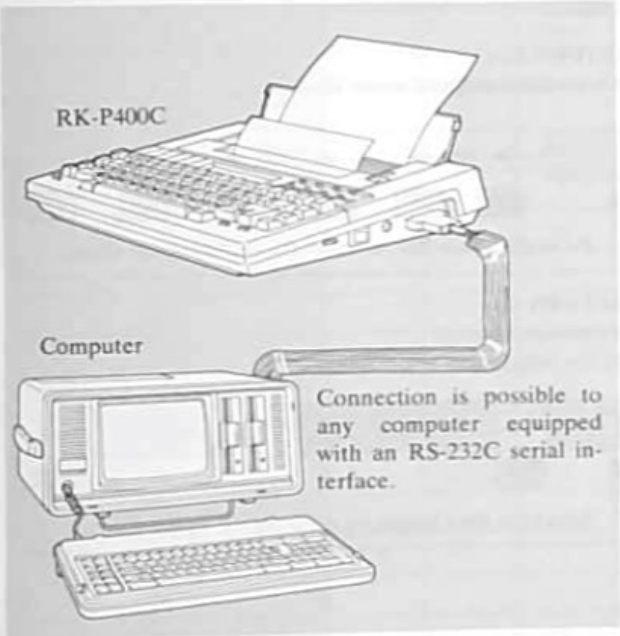
Y100 ⏎

USE AS A PRINTER

The RK-P400C has a built-in RS-232C interface which can be connected to any computer with a similar interface for use as a printer.

Connection to a Computer

Connection must be made after the power has been switched off.



Basic Specifications

Transmission speed	110, 150, 300, 600, 1200, 2400 (baud)
Synchronization method	asynchronization
Data length	7 bits (+1 parity) or 8 bits (no parity)
Parity	No parity check
Data format	10 bits/character SPACE (0) MARK (1) ST: Start bit D1 to D7: Data bits (D1: LSB) D8: Parity bit (MSB for 8 bit length) SP: Stop bit ST D1 D2 D3 D4 D5 D6 D7 D8 SP

Signal Level

Data logic	Voltage
SPACE (0)	+3~+12 V
MARK (1)	−3~−12 V

RS-232C Connector

Pin Assignment

Terminal No.	Signal name		RK-P400C Other unit
1	Frame Ground	FG	↔
3	Receive Data	RD	←
7	Signal Ground	SG	↔
20	Data Terminal Ready	DTR	→

Description of Signals

Receive Data (RD)...data from the computer

Data Terminal Ready (DTR) .... This line turns to "LOW" (MARK) when the communication buffer becomes full and the RK-P400C is busy.

Operation

1 Use the Interface Connector on the right side of the RK-P400C and the cable (optional) for connection.

2 Set the **POWER** Switch to "ON".

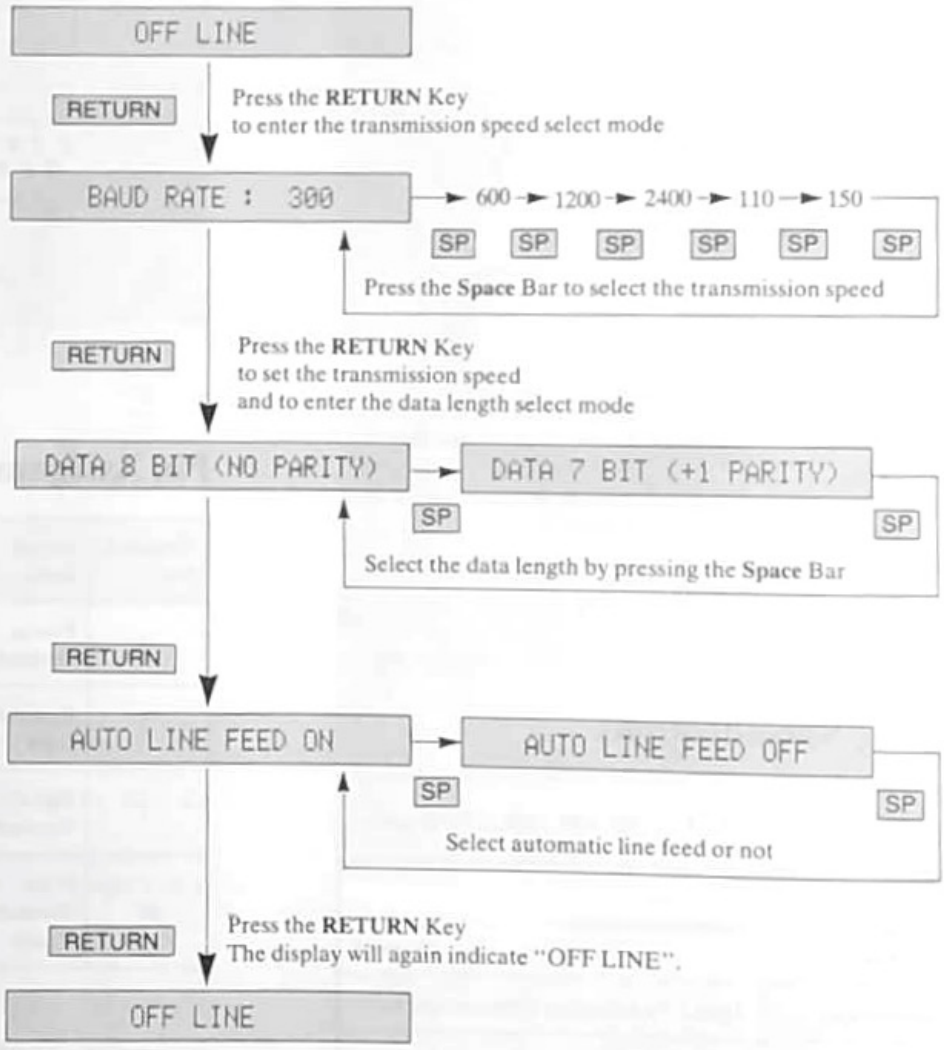
3 Set the **Operation Mode** Selector to "DP" and set the margins.

4 Select the printing style (color/printing mode/ character font/character size etc.)

5 Position the paper.

6 Set the **Keyboard** Selector to the "EXT" position. "OFF LINE" will be displayed on the LCD Display. No print-out occurs in this condition.

7 Set the transmission format.
When the **RETURN** Key is pressed during the OFF LINE mode, the transmission speed, the data length and automatic line feed can be selected.



- Once the settings have been made, they will remain stored in memory, so that setting is not required each time the power is turned on.

8 Press the **ON LINE** Key. The message "ON LINE" will be displayed on the LCD Display and the data receiving sequence from the communication line will start.

9 To stop data reception, press the **ON LINE** Key once again. The display will show "OFF LINE".

Data Types

Printing Codes

The input data from the Computer are converted to the following characters and symbols:

Lower \ Upper	0	1	2	3	4	5	6	7	8	9	A
0			Space	0	@	P	`	p	µ	±	§
1			!	1	A	Q	a	q	Fr	÷	£
2			"	2	B	R	b	r	Æ	Ç	ç
3			#	3	C	S	c	s	æ	↑	ß
4			$	4	D	T	d	t	Ø	¡	
5			%	5	E	U	e	u	ø	¿	
6			&	6	F	V	f	v	Å	¢	
7			'	7	G	W	g	w	å	¯	
8	BS		(	8	H	X	h	x	¥	´	
9			)	9	I	Y	i	y	×	`	
A	LF		*	:	J	Z	j	z	¼	ˆ	
B		ESC	+	;	K	[	k	{	⅓	¨	
C			,	<	L	\	l	|	½	˛	
D	CR		−	=	M	]	m	}	⅔	˚	
E			.	>	N	^	n	~	¾	˙	
F			/	?	O	_	o		¶	˚	

• For the five types of accent symbols (codes 97H to 9BH), the pen respectively stops at the printing position and moves after printing the next character.

Control Codes

Operations by control codes.
(The H after each control code indicates hexadecimal numbers.)

Symbol	Code	Operation
BS	08H	Back Space
LF	0AH	Line feed
CR	0DH	Carriage return
ESC	1BH	Special function in combination with the following code

Escape functions

ESC+"d" .....(1BH+64H) .....DP mode
ESC+"c" .....(1BH+63H) .....Command mode
ESC+"−"+"1" ..(1BH+2DH+31H) ..Underline ON
ESC+"−"+"0" ..(1BH+2DH+30H) ..Underline OFF
ESC+"−"+1 ....(1BH+2DH+1H)....Underline ON
ESC+"−"+0 ....(1BH+2DH+0H)....Underline OFF
ESC+"4" .....(1BH+34H) .....Italic ON
ESC+"5" .....(1BH+35H) .....Italic OFF
ESC+"E".....(1BH+45H) .....Bold ON
ESC+"F".....(1BH+46H) .....Bold OFF
ESC+"G" .....(1BH+47H) .....Bold ON
ESC+"H" .....(1BH+48H) .....Bold OFF

Automatic Line Feed Operation

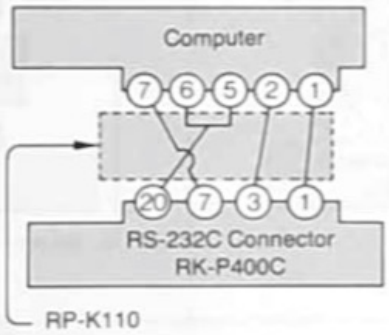
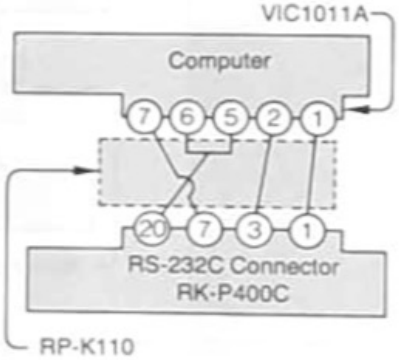
Code	Automatic line feed ON	Automatic line feed OFF
CR	Carriage return and line feed	Carriage return
LF	Carriage return and line feed	Line feed
CR+LF	Carriage return and line feed	Carriage return and line feed
LF+CR	Carriage return and line feed	Carriage return and line feed

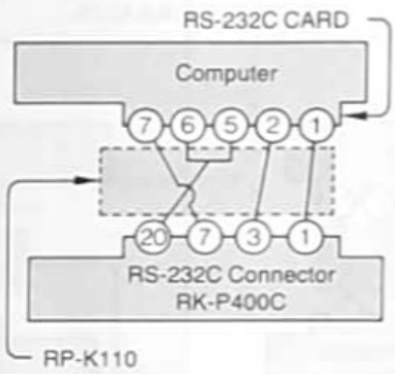
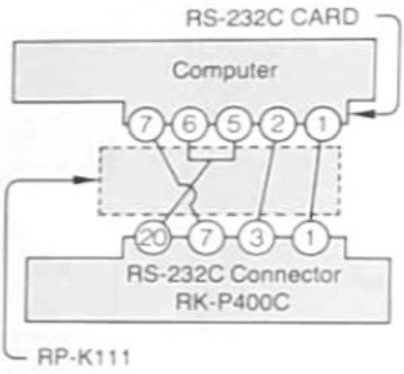
Automatic Return

When the carriage reaches the right margin during the printing of data from a computer, a carriage return is automatically.

The **PAPER INSERT**, **INDEX** and the **REV INDEX** Keys can be used for the paper movement during OFF LINE mode.
Automatic power-off will not operate during EXT mode.

RS-232C to Computer Interface

Model	Sr. Partner (Panasonic) RL-H7000	Commodore 64 (Commodore)
RS-232C Serial Interface Card	built in	VIC1011A (Commodore)
Cable	RP-K110	RP-K110
Connection		
Connecting Condition	Baud Rate 1200 Data Length 8 bits Stop bit 1 bit Parity None	Baud Rate 110 Data Length 8 bits Stop bit 1 bit Parity None
Sample Program	A>MODE␣COM1:1200, N, 8, 1, P ↵ A>MODE␣LPT1:=COM1 ↵ A>BASICA ↵ 10␣LPRINT "PANASONIC" RUN ↵	10␣OPEN 2, 2, 2, CHR$ (3)+CHR$ (17) 20␣PRINT#2, "PANASONIC" 30␣CLOSE 2 RUN ↵

Model	Apple II (Apple)	IBM-PC (IBM)
RS-232C Serial Interface Card	Super Serial Card (Apple)	Asynchronous Adaptor Card (IBM)
Cable	RP-K110	RP-K111
Connection		
Connecting Condition	Baud Rate 300 Data Length 7 bits Stop bit 1 bit Parity Space	Baud Rate 300 Data Length 8 bits Stop bit 1 bit Parity None
Sample Program	10 ␣ PR# 2 20 ␣ PRINT CHR$ (9);"1D" 30 ␣ PRINT CHR$ (9);"7P" 40 ␣ PRINT CHR$ (9);"6B" 50 ␣ PRINT "PANASONIC" 60 ␣ PR# 0 RUN ↵	A>MODE ␣ COM1:300, N, 8, 1, P ↵ A>MODE ␣ LPT:=COM1 ↵ A>BASICA ↵ 10 LPRINT "PANASONIC" RUN ↵

OPTIONAL ACCESSORIES

- **Ball-Point Pen Set**
  - RP-K411...4 Black Pens(correctable)
  - RP-K404...4 Color Pens (Black, Blue, Green, Red)
- **Correction Pen Set**
  - RP-K422...Correctable Pen×1, Erasing Pens×2, Re-printing Pen×1
- **Interface Cables**
  - RP-K110...for Commodore 64, Apple II and Panasonic RL-H7000 (Sr. Partner)
  - RP-K111...for IBM PC

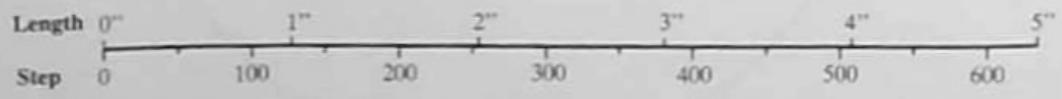
PRODUCT SERVICE

Should your Panasonic product ever require service, refer to enclosed Directory for MESCO Authorized Servicenters or consult your authorized Panasonic dealer for detailed instructions.

TROUBLE SHOOTING

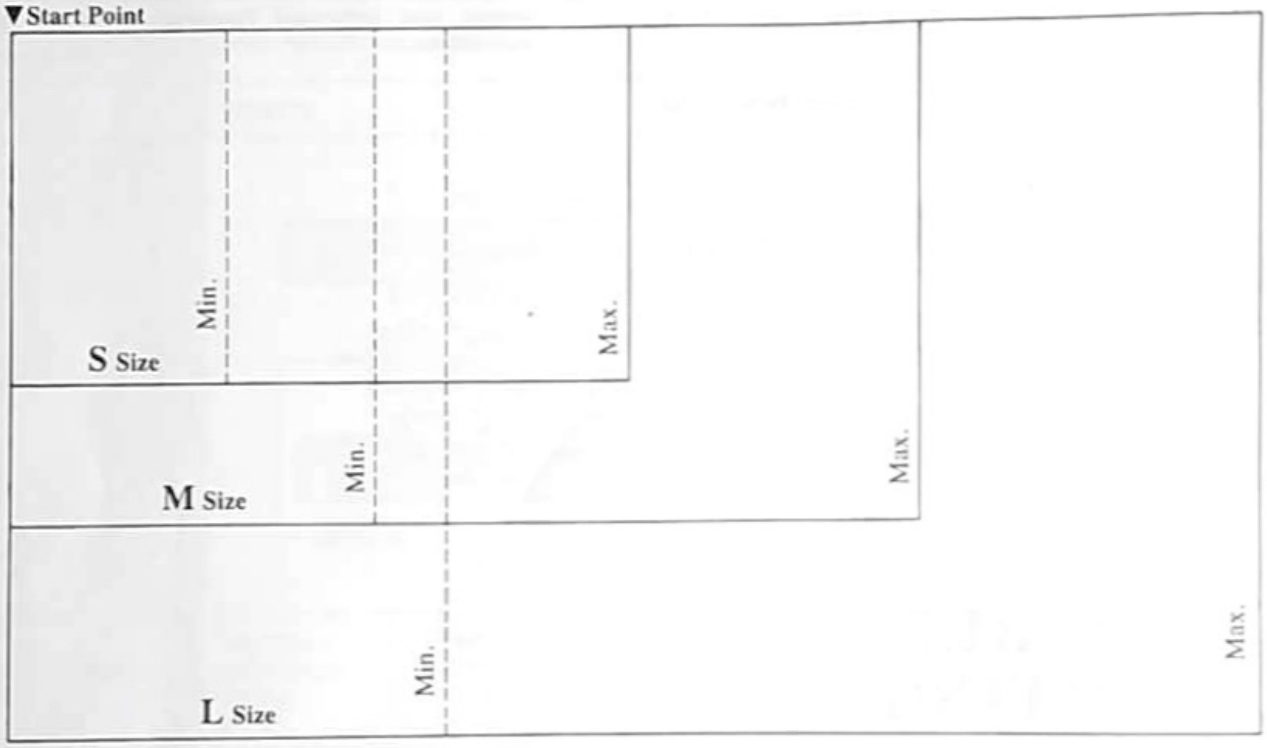
If printer operation locks up, reset the printer by turning the **POWER** Switch OFF then ON.
Data stored in the Text Memory will still be saved.

Comparison between Length and Number of Steps

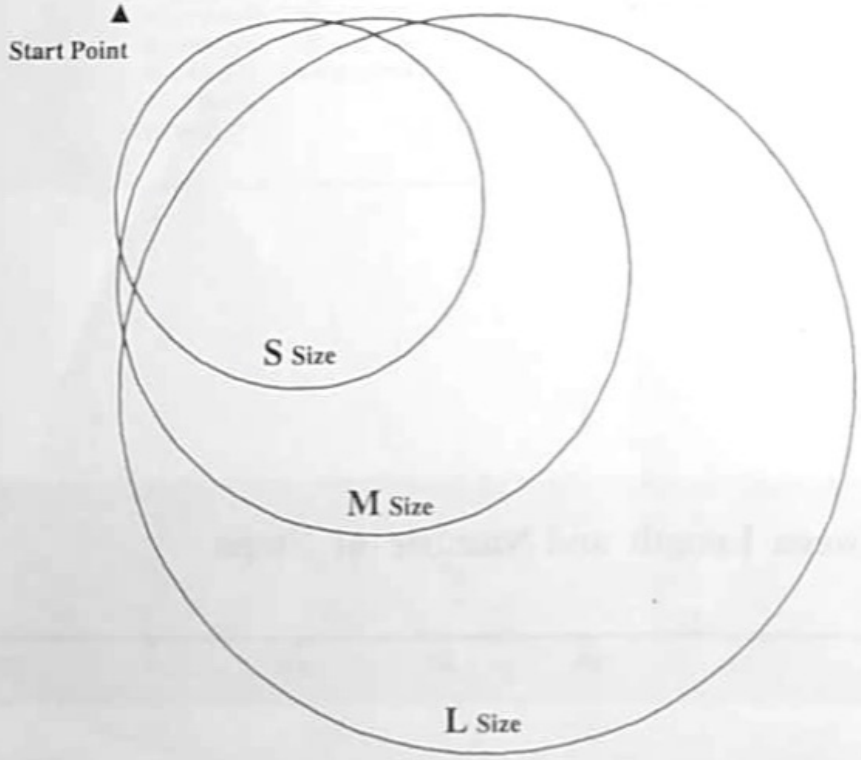


DRAWING SIZES

Drawing Areas of Bar Graph and Line Graph



Drawing Areas of Pie Chart and Radar Chart



SPECIFICATIONS

Printing method	Pen plotter method
Printing speed	7.5 characters/sec (standard characters)
Pen	Water Base Pen
Color	4 colors (Black, Red, Green, Blue)
Paper capacity	8½" (21.6 cm) 60~110 μm (Thickness)
Display	24-Character LCD Display
Printing characters and symbols	113 characters (128 characters with connection by RS-232C)
Characters/line	80 characters/line (character size: Standard)
Character size	10 sizes
Character font	Courier/Italic
Graphic package	4 Graphic Packages (Pie, Bar, Line, Radar) and Column Layout
Keyboard	Character Keys... 45 Function Keys...28
Line space	1, 1½, 2
Graphic commands	13 commands
Interface	Serial RS-232C interface (Receive only)
Power supply	Batteries: 9 V (Six "C" size Alkaline batteries) [LR14 (AM2, L70)] AC: 120 V, 60 Hz [Use of Panasonic RP-K940 AC Adaptor (included)]
Power consumption	14 W [Use of Panasonic RP-K940 AC Adaptor (included)]
Operating temperature	41°F~95°F (5°C~35°C)
Dimensions (W×H×D)	14¼"×2½"×10½" (362×62×268 mm)
Weight	5.7 lbs. (2.6 kg) without batteries

• Design and Specifications are subject to change without notice.

Panasonic Company
Division of Matsushita Electric
Corporation of America
One Panasonic Way, Secaucus,
New Jersey 07094

Panasonic Hawaii, Inc.
91-238 Kauhi St. Ewa Beach
P.O.Box 774
Honolulu, Hawaii 96808-0774

Panasonic Sales Company,
Division of Matsushita
Electric of Puerto Rico,
Inc.
Ave. 65 De Infanteria, KM9.7
Victoria Industrial Park
Carolina, Puerto Rico 00630

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