

SHARP®

PRINTER/CASSETTE INTERFACE

MODEL **CE-50P**

INSTRUCTION MANUAL

The lower half of the cover features a complex, abstract pattern of diagonal lines. The lines vary in thickness and spacing, creating a sense of depth and movement. The colors range from dark grey to light grey, with some lines appearing as thin white streaks against a darker background. The overall effect is a textured, almost 3D-like appearance.

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INTRODUCTION

Congratulations on your purchase of the SHARP CE-50P Printer/Cassette Interface. You'll find it a powerful addition to your Sharp Calculator, Data Book, or Pocket Computer. With the CE-50P, you can have "hard-copies" of programs and data.

The cassette interface in conjunction with a cassette recorder allows you to store and retrieve programs and data to and from cassette tapes.

For the sake of simplicity, in this manual, the "Printer/Cassette Interface" will be called "printer". Any Sharp "Calculator", "Data Book", or "Pocket Computer" that connects to this printer will be called "calculator".

The CE-50P can only be connected to calculators which have a connection designed for it.

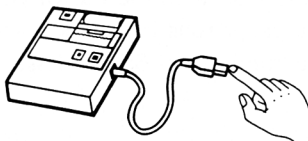
PRECAUTIONS

To insure trouble-free printer operation, please observe the following precautions:

- Do not expose the printer to moisture, as this will damage the internal circuitry.
- Do not expose the printer to extreme temperatures. The unit should not be placed in direct sunlight or in a closed vehicle, nor should it be placed near such heat sources as heaters, etc.
- Do not store the printer in a humid or dusty place.
- Use a soft, dry cloth to clean the printer. Do not use any solvent or wet cloth.
- Do not drop or carelessly handle the printer.

CAUTION:

Never touch the pins of the connector.
The internal circuits can be damaged
by static electric discharges.

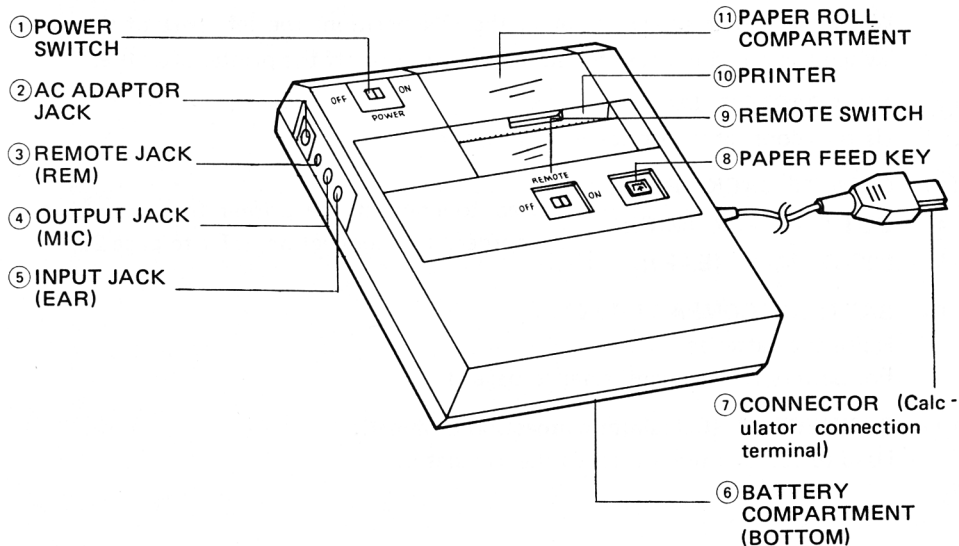


If service should be required on this equipment, use only a SHARP servicing dealer, SHARP approved service facility, or SHARP repair service where available.

Handling of the thermal paper

- 1) The print on thermal paper may fade if exposed to bright light or high temperatures for a long period of time.
- 2) Thermal paper should be protected from extremes of temperature, moisture and sunlight.
- 3) Avoid using a solvent-type glue or paste on printed thermal paper.
- 4) The thermal paper should not come in contact with PVC sheet.
Otherwise, the print on the thermal paper may fade.
- 5) The thermal paper should not come in contact with ammonia.
Otherwise, the thermal paper will change color.
- 6) Thermal paper is extremely sensitive to oil from your hands. Try to avoid touching the paper as much as possible — even light contact can cause oily discoloration which can distort the quality of printing. When loading paper, hold the paper by the edges with the side of your fingers so there is minimum contact.
- 7) Store paper rolls in a dark place at an average temperature of 25°C (77°F) or less and a humidity of 65% or less.

PARTS IDENTIFICATION



- ① **POWER SWITCH:**
When the power switch is pushed to "ON", the printer is ready for operation. Slide to "ON" to turn on the printer for use and to "OFF" to turn off.
When the power switch is set in the ON position, the left part of the power switch is marked in green to remind you to turn off the printer after use.
- ② **AC ADAPTOR JACK:**
Used to connect the optional AC adaptor.
- ③ **REMOTE JACK (REM):**
④ **OUTPUT JACK (MIC):**
⑤ **INPUT JACK (EAR):** } Used to connect the printer to a cassette tape recorder. For connection, refer to page 20.
- ⑥ **BATTERY COMPARTMENT:**
Holds the batteries.
For battery replacement, refer to page 8.
- ⑦ **CONNECTOR (Calculator connection terminal):**
Used to connect the printer to the calculator.

- ⑧ **PAPER FEED KEY:**
With the power switch set to the ON position, pressing this key allows the paper to advance forward. The paper feed key does not function during printing.
- ⑨ **REMOTE SWITCH:**
This turns the remote function ON and OFF. With the switch set to the ON position, the calculator controls the starting and stopping of the cassette recorder. With the switch in the OFF position, these functions are cancelled (OFF), allowing the cassette tape recorder to be operated manually.
- ⑩ **PRINTER:**
Prints programs and data.
- ⑪ **PAPER ROLL COMPARTMENT:**
Holds the paper roll.

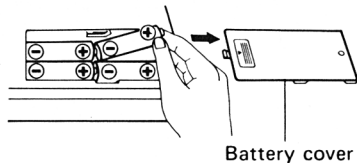
BATTERY INSTALLATION AND REPLACEMENT

Battery: Heavy duty manganese battery, size AA (or R6) x 4

1. Set the power switch to the OFF position.
2. Remove the battery cover by sliding it in the direction of the arrow on the cover.
3. Replace the batteries. Be sure that the “+” and “-” marks on the battery correspond to the “+” and “-” marks in the printer. Always replace all four batteries at the same time.
4. Replace the battery cover.

The following indicates that the batteries should be replaced.

- Printing speed is slow, or the printer does not function properly, or
- Error message is displayed on the calculator, or
- The printer does not operate properly even when the power switch is in the ON position (no paper feed or printout is possible), or
- Remote function does not operate even when the remote switch is in the ON position.

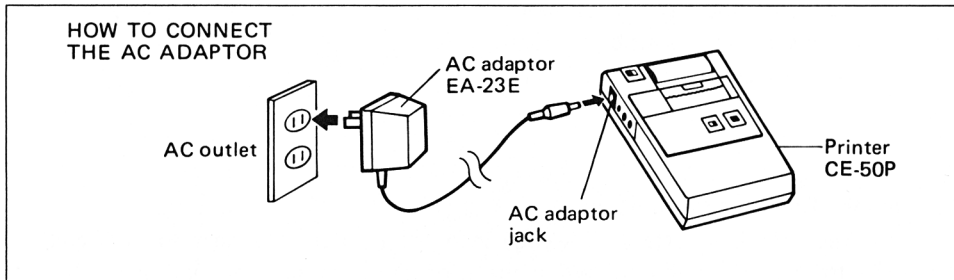


Note: Keeping a worn battery in the battery compartment may result in damage to the printer due to battery leakage of the battery.
Remove worn batteries promptly.

AC Adaptor (Option)

This printer can also be operated on AC power by using an optional AC Adaptor. When the AC adaptor is connected to the printer, the power source is automatically switched over from the batteries to AC power source.

AC adaptor: Model EA-23E (Option)



- Note:
- When the printer is not in use, be sure to remove the adaptor from the printer and the wall outlet.
 - Turn off the printer power before connecting or disconnecting the adaptor.
 - Use ONLY EA-23E AC adaptor.

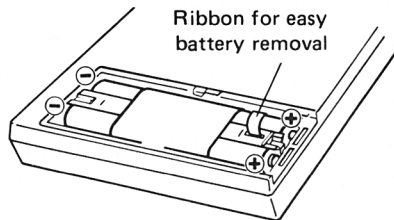
CAUTION

Using an AC adaptor other than EA-23E may damage the printer.

Rechargeable Battery: Model EA-27B (Option)

Rechargeable Battery Installation

The rechargeable battery is used to replace the dry batteries. First remove the dry batteries from the battery compartment, then insert and position the rechargeable battery as illustrated.



Charging the Rechargeable Battery

Place the rechargeable battery (EA-27B) into the printer. Connect the AC charger (EA-23E) to the printer by following the procedure for the connection of the AC adaptor. Charging is completed in about 15 hours during which time the printer or remove function should not be operated. When fully charged, the battery allows the printer to print approx. 5,000 lines of characters.

Precautions When Charging the Battery

- The rechargeable battery (EA-27B) may below in voltage due to self-discharge when used for the first time or when not used for extended periods. Therefore, charge the battery before use.

- When charged for the first time or after storage for extended periods, the battery may not provide specified operating time (approx. 5000 lines) even if charged sufficiently. However, it will return to normal after repeated charge/discharge cycles.
- Charge the battery once or twice every 3 months even when not in use for extended periods. This allows the battery to give long, trouble-free service.
- Do not charge the battery for more than 24 hours at a time since battery performance may deteriorate.
- Never charge the battery outside the temperature range of 0°C (32°F) to 40°C (104°F), otherwise, this may cause the battery performance to deteriorate.
- When the operating time is reduced to half even after proper charge/discharge cycles are repeated, this indicates the end of battery life. If this happens, replace the battery with a new one.

SETTING UP

Connecting the Calculator to the Printer

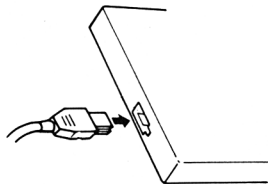
The connectors on the printer and calculator are designed to connect easily. It is extremely important that you do not force the two together.

1. To connect the printer with the calculator, turn off the power for both the printer and the calculator by sliding the power switch to the OFF position or pressing the OFF key.

Important Note! It is essential that the printer and the calculator are both turned off.

If the power is on, the calculator may render all keys inoperative. If this occurs, press the RESET button on the back of the calculator.

2. Connect the connector of the printer to the calculator as shown in the figure below.
3. Turn on the printer and the calculator power and then press the **C** key (or the **CL** key). If the **C** key (or the **CL** key) is not pressed, the printer may not operate. Note: Calculators that can be connected to the printer have a **CL** or **C** key. Check which key your calculator has before use.



Note: If the calculator has a protective pins cover, remove it before connection and replace it after disconnection.

PRINTER

Paper Installation

- (1) Turn off the power switch.
- (2) Open the paper cover. (Fig. 1)

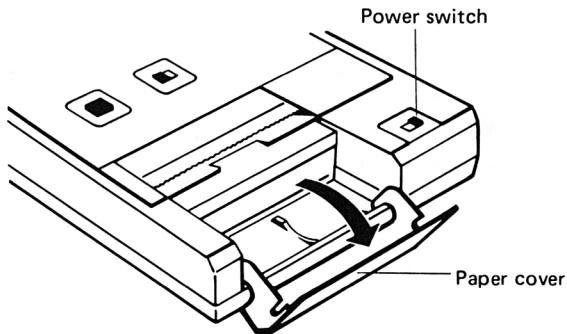


Fig. 1

(3) Insert the leading edge of the roll of paper into the slot located in the paper roll compartment. (Fig. 2)

If the leading edge is jagged, cut it straight with a pair of scissors. (Fig. 3)

(Any curve or crease near the beginning of the paper makes insertion difficult.)

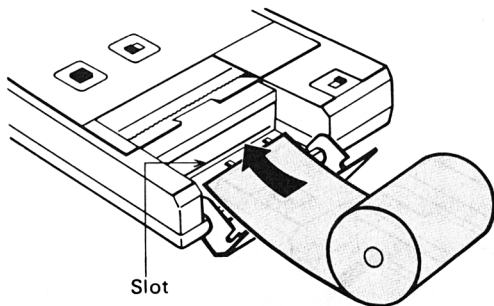
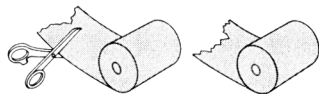


Fig. 2



Correct

Wrong

Fig. 3

NOTE: Using a loose paper roll may cause poor paper feeding or paper jams. Therefore, be sure to tighten the roll before using as shown in the figure.

Paper roll



Wrong



Correct

- (4) Turn on the power switch and press the paper feed key until the leading edge of the paper comes out of the printer mechanism. (Fig. 4)

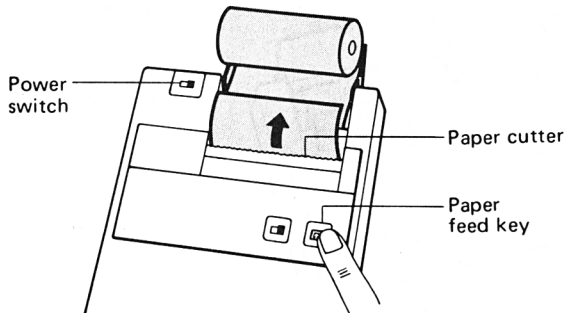


Fig. 4

- (5) Install the roll into the compartment.
- (6) Close the paper cover. (Fig. 5)

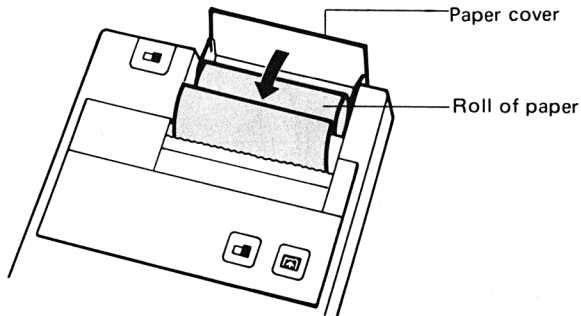


Fig. 5

- The printer is equipped with a paper release mechanism. To take out the roll of paper from the printer, first loosen the paper roll and cut the paper on the compartment side (not the paper cutter side). Then lift out the paper roll and pull out the remaining paper from the paper cutter side. Do not pull out the paper backwards (i.e. through the compartment side) as this may damage the printer mechanism.

CAUTION:

Paper rolls are available wherever the printer is sold.


Please order product No. EA-1250P (5 rolls per package) when reordering the paper roll. The paper roll is specifically designed for this printer. Use of any other paper may cause damage to the printer.

Printer Operation

To use the printer, perform the following;

- 1) Turn on the calculator, and then the printer. Press the **C** key (or the **CL** key).
If the **C** key (or the **CL** key) is not pressed, the printer may not operate.
- 2) Please refer to the calculator's operation manual for paper printing instructions.

CAUTION:

- In case an error occurs due to a paper jam, turn off the printer, tear off the paper tape, and pull the remaining part of the paper tape completely out of the printer. Then turn on the printer and press the **C** key (or the **CL** key) to clear the error condition.
- When the printer is exposed to strong external electrical noise, it may print meaningless characters at random. If this happens, depress the **C** key (or the **CL** key) to stop the printing, then turn off the printer and then back on again, and finally press the **C** key (or the **CL** key) again.
Pressing the **C** key (or the **CL** key) again will return the printer to its normal condition.
- When the printer is not in use, turn off the power switch to save the battery life.
If the calculator will not be used for a long period of time, disconnect the printer from the calculator.
- The paper feed key () does not function during printing.

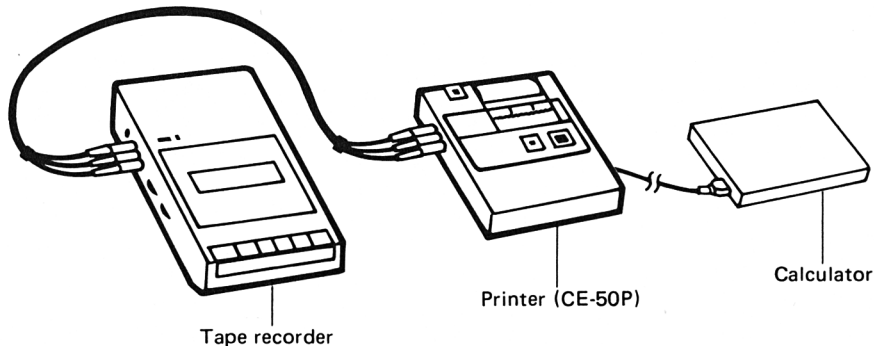
- If printing stops suddenly, turn off the power switch and then turn it back on. Leaving the printer in this stopped state may adversely affect printing.
- Battery power consumption is greater during continuous high density printing. Use of the optional AC adaptor (EA-23E) or rechargeable battery (EA-27B) is recommended during continuous high density printing.

CASSETTE INTERFACE

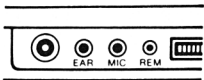
Tape Recorder Connection

Using the printer cassette interface (printer) and a cassette tape recorder will allow you to store and retrieve calculator programs and data to and from cassette tape.

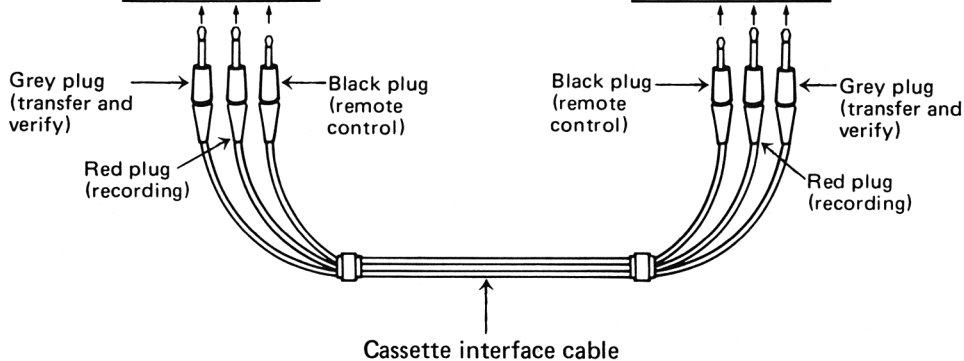
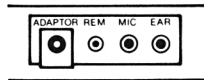
First connect the printer and the calculator, and connect a cassette tape recorder to the printer as shown in the following diagrams.



Tape Recorder



Printer (CE-50P)



Tape Recorder Requirements

The following is a description of the minimum tape recorder specifications necessary for interfacing with the printer:

Item	Requirements
1. Recorder Type	Cassette, microcassette, or open reel tape recorder or deck, may be used in accordance with the requirements outlined below.
2. Input Jack	The recorder should have a mini-jack input labeled "MIC". Never use the "AUX" jack.
3. Input Impedance	The input jack should be a low impedance input (200 ~ 1,000 Ω .)
4. Minimum Input Level	Below 3 mV or -50 dB.
5. Output jack	Should be a mini-jack labeled "EXT. (EXTernal speaker)", "MONITOR", "EAR (EARphone)" or equivalent.
6. Output impedance	Should be below 10 Ω .
7. Output level	1 Vrms or higher (practical maximum output above 100 mW or more)

Item	Requirements
8. Distortion	Up to 15% within a range of 2 KHz through 4 KHz.
9. Wow and Flutter	0.3% maximum (W.R.M.S)
10. Other	Recorder motor speed should not fluctuate.

* In case the miniplug provided with the printer is not compatible with the input/output jacks of your tape recorder, adaptor plugs are available on the market.

NOTE:

- Some tape recorders may not operate satisfactorily due to incompatible specifications and others due to degraded performance (e.g. increased distortion and noise and power deterioration) after long years of use.
- Turn off the mixing function during recording and playback for tape recorders equipped with this function.
- Some tape recorders may require that the red plug be removed from the MIC jack during playback.
- Transfer and verify operations may not be possible depending on the positions of the volume and tone (tone, bass, treble) controls. Slightly vary the positions until the transfer and verify operations become possible.

BEFORE CALLING FOR SERVICE

Before calling service, please check the following:

Symptom	Probable cause	Remedy
Printer does not operate (no paper feed or no printout).	<ul style="list-style-type: none">● Battery voltage is low.● Power switch is turned OFF.	<ul style="list-style-type: none">● Replace batteries.● Turn power switch to ON position, and press C key (or CL key).
If executed, printing statement is ignored.	<ul style="list-style-type: none">● Calculator does not recognize that printer is connected.● Printer is not connected.● Battery voltage is low.● Paper is jammed. ● Power switch is turned OFF.	<ul style="list-style-type: none">● Turn power switch to ON position, and press C key (or CL key).● Connect printer.● Replace batteries.● Turn off the printer, take out jammed paper, again turn on the interface, and finally press C key (or CL key).● Turn power switch to ON position

Symptom	Probable cause	Remedy
Remote function does not operate.	<ul style="list-style-type: none">● Remote switch is turned OFF.● Remote plug is not connected.	<ul style="list-style-type: none">● Turn remote switch to ON position.● Connect the black plugs of the cassette cable to the REM jacks on the recorder and on the printer.

SPECIFICATIONS

Type: CE-50P, Printer/Cassette Interface

PRINTER PORTION

Type: Thermal dot printer

Printing columns: Max. 21 columns/line (varies according to the type of calculator)

Printing speed: Approx. 0.9 line/second

Paper feed speed: Approx. 0.9 line/second

Paper: Thermal paper (heat sensitive paper), EA-1250P
18mm (23/32") roll outer diameter (max.)
58mm (2-9/32") wide

Power source: 6V \therefore (DC): Heavy duty manganese battery, size AA (or R6) x 4
AC: Local voltage with AC adaptor EA-23E (Option)
4.8V \therefore (DC): Rechargeable battery, EA-27B (Option)

Operation: Heavy duty manganese battery, size AA (or R6P):
Approx. 3,000 lines
UM-3: Approx. 2,000 lines
Rechargeable battery (EA-27B): Approx. 5,000 lines after charging 15 hours

(Condition: 5555555555. is on continuous printing at an operating temperature of 20°C (68°F), this number of printing lines varies with the type of battery or the way of use.)

- Power consumption: 3.0W
- Operating temperature: 0°C ~ 40°C (32°F ~ 104°F)
- Dimensions: 116 (W) x 140.5 (D) x 23 (H) mm
4-9/16" (W) x 5-17/32" (D) x 29/32" (H)
- Weight: 290 g (0.64 lbs.) (with batteries)
- Accessories: Soft case, Dry cell battery x 4, Paper roll x 3, Cassette interface cable, and Operation manual
- Optional accessories: AC adaptor EA-23E, Rechargeable battery EA-27B and Thermal paper roll EA-1250P

— Memo —

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