

# CASIO FA-20

**CASIO®**

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This manual refers to the operation of the FA-20 and its connection to a computer or a tape recorder. Please read it carefully so that you can use the FA-20 in the correct manner.

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## INSTRUCTION MANUAL

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## MANUAL DE INSTRUCCION

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英西

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Thank you very much for purchasing the CASIO FA-20 printer equipped with a cassette interface. Being compatible with CASIO pocket computers, it can print out program lists or when used as a cassette interface, it allows to save data and programs on tape.

You need not worry about damaging the printer, computer, or tape recorder by improper connections, but it may delete the programs or data in memory or on tape. So special care is required when connecting the printer.

This manual refers to the operation of the FA-20 and its connection to a computer or a tape recorder. Please read it carefully so that you can use the FA-20 in the correct manner.

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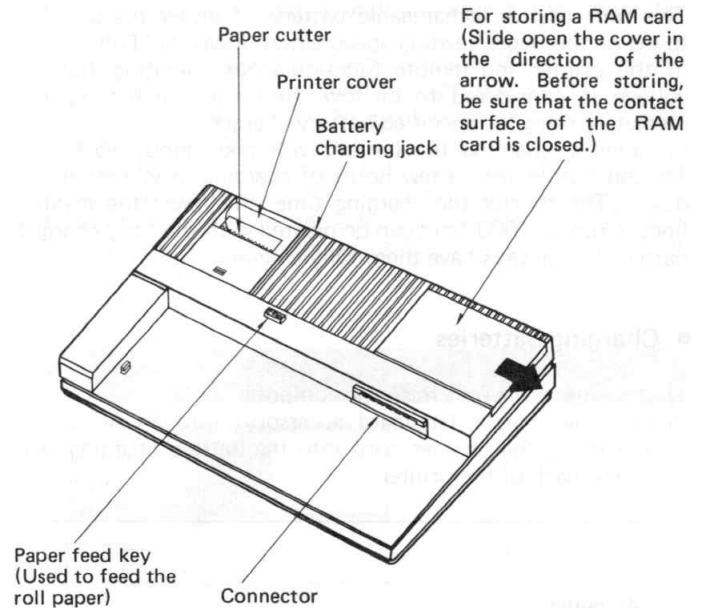
INSTRUCTION MANUAL

MANUAL DE INSTRUCCION

## Precautions

- This unit is made up of precision electronic parts. Avoid exposing it to high or low temperatures, when using or storing it. Also, avoid humid or dusty places. Protect it from a strong impact or a sudden change in temperatures.
- When connecting the unit to a computer, be sure to turn off the computer's power switch. Connecting without turning off the power switch may delete programs or data in memory. Use care not to damage the connector when connecting the unit.  
Also, when disconnecting the unit, turn off the computer's power switch.
- When the computer's power switch is turned on with this unit connected to the computer, it may happen that the printer operates. In this case turn off the power switch and turn it on again.  
And if printing is attempted but the printer does not operate (the computer displays "NR ERROR"), turn off and on the power switch in the same manner.
- The unit uses a rechargeable nickel cadmium battery which could deteriorate by nature or cause chemical leakage when left unused for a long time. Therefore, they must be recharged every six months, even when the printer is not used.
- Never take the unit apart.
- To clean the unit, use a soft, dry cloth or a cloth (dipped in a neutral detergent and tightly squeezed). Never use a volatile substance such as a thinner, benzine, etc.
- Before having the unit serviced, please check the power supply and method of operation. If the unit is still inoperative, then contact your retailer or nearby dealer.

## Nomenclature



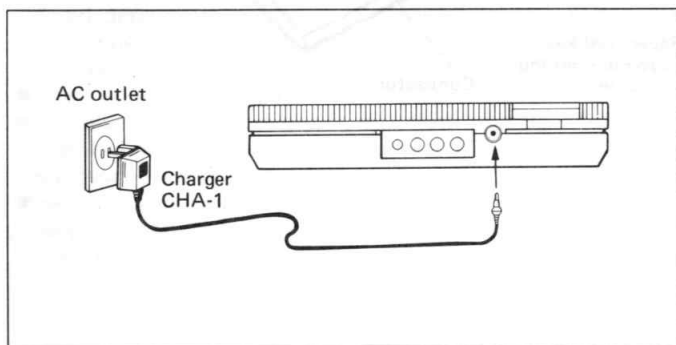
## Power Source

This unit uses a rechargeable battery. If either the printing speed or the paper feeding speed slows down, or if either one of the printer and remote function stops operating, battery voltage is considered to be low. Recharge the battery immediately using the specified battery charger.

Completely charging the battery will take about 15 hours. Though usable after a few hours of charging, it will soon run down. The shorter the charging time, the fewer the printed lines. (About 3,000 lines can be printed with the fully-charged battery.) So always have them fully charged.

### ■ Charging batteries

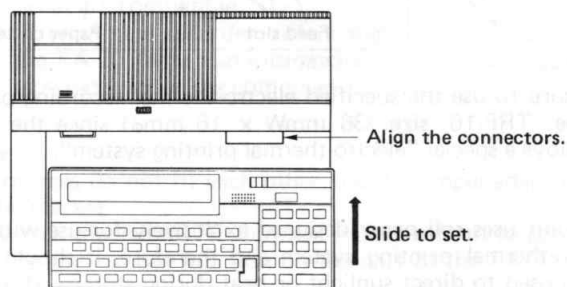
- 1) Disconnect the unit from the computer.
- 2) Plug the charger (standard accessory) into an AC outlet and insert the charger cord into the battery charging jack on the back of the printer.



### ■ Use of the charger

- 1) When charging the battery, do not forget to turn off the computer's power switch and disconnect the computer from the FA-20.
- 2) Be sure to use the genuine CASIO charger (CHA-1). The use of any other make may cause damage to the unit or in the worst case, may invite an explosion of battery. Such damage will not be warranted.
- 3) During charging, the charger will warm up but it is normal. After charging, remove the charger from the AC outlet.
- 4) If the battery has to be recharged too often, it is a sign that the battery is no longer usable. Apply to the original store or nearby dealer.

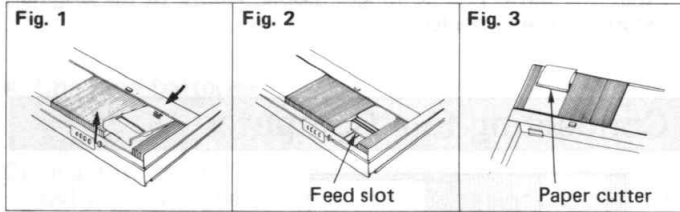
## Connecting to a Computer



- \* When connecting, be sure to turn off the computer's power switch.
- \* Never touch the connector portion (of the unit or computer) directly by hand. They could be deformed or fouled, thus causing bad contact. Also, it is possible to damage internal circuitry by the static electricity held in your body.

## Roll Paper

- 1) Connect the unit and turn on the computer's power switch.
- 2) As shown in Fig. 1, open the printer cover.
- 3) Cut off the leading end of the roll paper squarely and hold the roll paper with the leading end passing underneath. While inserting the leading end into the feed slot, press the **FEED** key until the leading end comes out 2 or 3cm. (Never pull out the leading end with your fingers.)
- 4) Place the roll paper in the box and close the printer cover.



\* Be sure to use the specified electro-thermal recording paper (type: TRP-16, size: 38 mmW x 16 mm $\phi$ ) since the unit employs a special "electro-thermal printing system".

### Note:

This unit uses roll paper designed exclusively for use with an electro-thermal printing system and therefore, it should not be exposed to direct sunlight or heat during storage. If exposed for a long time, the paper may discolor. To stick a printed paper slip to a notebook or the like, be sure to use paste. The use of any other adhesive or adhesive tape may discolor the printed tape.

## Compatible Tape Recorders

- Tape recorders compatible with the FA-20  
Tape recorders using cassette tape or microcassette tape

### ● Conditions for compatibility

- 1) The "MICROPHONE" or an equivalent input terminal on a tape recorder must be 10 kohms or more in input impedance and 3 mV or more in the minimum input level.
- 2) The "EARPHONE", "MONITOR" or an equivalent output terminal on a tape recorder must be 10 ohms or less in output impedance and 2.5V or more in output level.
- 3) Specifications for the "REMOTE" or an equivalent terminal on a tape recorder must be DC24V, and 1A or less.
- 4) The total distortion factor must be within 15%.

If conditions 1 to 4 above are met, any tape recorder is compatible. Almost all radio-cassette recorders currently sold on the market are compatible.

Even if your tape recorder differs slightly, it may still work with the FA-20. Note that mismatching will not damage either your tape recorder or the computer.

### Note:

If terminals do not fit each other, use the proper adaptor sold on the market.

Note that the REMOTE terminal must conform to specification, or the remote function on the part of the FA-20 could be damaged.

## Notes on Interfacing

To give maximum performance to the tape recorder interfaced with the FA-20, bear in mind the following points:

- Jacks on the tape recorder are free of rust or cracks.
- The tape recorder head is clean and not worn.
- The tape in use is a conventional type and has good frequency response.
- The tape is free of scratches or folds. It is advisable to allow the cassette to wind on for about 30 seconds without recording when starting at the very beginning. Also, stop recording about 30 seconds before the tape winds up.
- If the tape recorder does not work properly on an AC outlet or with an AC adaptor, use batteries.
- Connect the computer to the FA-20 correctly and never attempt to disconnect it while operating. When connecting or disconnecting, be sure to turn off the computer's power switch.
- To load data from a tape to the computer, use the same tape recorder as used in storing. Though very seldom, using a different tape recorder may make it hard to load data.
- When storing the tapes, use care so that they are in good condition.  
\* If stored improperly, the tape may stretch, thus making it impossible to load.

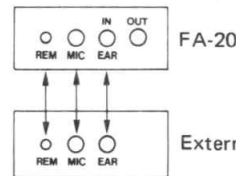
## Before Storing and Loading

### ■ Terminal connections

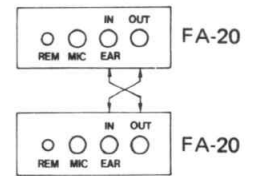
- Connect the terminals by the cables (standard accessories) properly.
- Connect "MIC" on the FA-20 to "MIC" on the tape recorder. (On a stereo-recorder, connect "MIC" on the RIGHT side.)
- Connect "EAR (IN)" on the FA-20 to "EAR", "MONITOR", or "EX SP" on the tape recorder. (In the case of stereo-recorder, connect "EAR (IN)" on the FA-20 to the RIGHT side.)
- Connect "REM" on the FA-20 to "REMOTE" on the tape recorder.
- The three cables can be used simultaneously to interface the FA-20 with a tape recorder, but on some tape recorders, simultaneous connections of "MIC" to "MIC" and "EAR" to "EAR" may cause noise, thus adversely affecting the condition of interface. So it is advisable to connect "MIC" jacks when storing (computer to tape) and connect "EAR" jacks when loading (tape to computer).

### Input/output terminals

- Connecting to external tape recorder



- Connecting two FA-20's



### ■ Recording level adjustment . . . . . while storing

- If the auto-level control is provided, turn it on.
- If not, adjust the level control manually as follows:  
Store test data, and, while doing so, adjust the level control so that the VU meter reads to zero.

**Note:** If the level meter needle deflects excessively even after the zero adjustment is made, it is advisable to stop using the tape recorder.

### ■ Output level adjustment . . . . . while loading

- Normally the volume control should be set to between the medium and maximum so that the volume is a little higher than when listening to music. (Generally, the volume control should be set to maximum.)
- On a stereo-recorder, turn the balance control to the extreme position of the channel you are using (i.e. the channel the black plug is connected to).
- If the tape recorder has a microphone-mixing feature, turn the SOURCE level control to maximum, and the MICROPHONE level control to minimum.

### ■ Other miscellaneous adjustments

- Set TONE, BASS, and TREBLE to a medium level.
- Set the tape selector according to the tape type.

## When Storing or Loading is Impossible

In some cases, storing or loading data or programs may be difficult. Check the following points:

- "RW ERROR" appears during storing.  
Check points:  
Check to see if the FA-20 is correctly connected to the computer.
- "RW ERROR" appears during loading.  
Check points:  
Check the tape and if it is stretched, replace it.  
If the tape recorder head is dirty, clean it with a cleaning kit sold on the market.  
Set the tape recorder tone control to a medium level.
- When loading, no error sign appears but no information can be loaded.  
Check points:  
The tape recorder's output volume is low. Increase it by turning the volume control close to maximum.  
Check to see if the tape recorder's output specification matches the FA-20.

## SPECIFICATIONS

**Model:** FA-20

### ■ Printer

**Printing system:** Electro-thermal (Non-impact)

**Columns per line:** 20

**Printing speed:** 1.0 line per second

**Character composition:** 5 x 7 dot matrix

**Roll paper:** 38mm in width, 16mm $\phi$  or less  
Electro-thermal printing paper (TRP-16)

### ■ Cassette interface

**Output terminals:**

- OUT 3.5mm $\phi$   
Output impedance 10k $\Omega$  (approx)  
Output level 3 – 5V
- MIC 3.5mm $\phi$   
Output impedance 40k $\Omega$  (approx)  
Output level 3 – 5mV

**Input terminal:**

- EAR (IN) 3.5mm $\phi$   
Input impedance 20k $\Omega$  (approx)  
Input level 2.5 – 50V

**Remote control terminal:** REM 2.5mm $\phi$ , 24V, 1A or less

**Recording system:** Kansas City Standards (300BPS)

### ■ Common section

**Power source:** Rechargeable battery (built-in)

**Battery charger:** CHA-1

**Power consumption:** Max. 5W

**Battery life:** (when the battery is fully charged.)  
Printing only – approx. 3000 lines

**Ambient temperature range:** 0°C – 40°C (32°F – 104°F)

**Dimensions:** 40mmH x 210mmW x 162mmD  
(1 $\frac{5}{8}$ "H x 8 $\frac{1}{4}$ "W x 6 $\frac{3}{8}$ "D)

**Weight:** 450 g (1 lb.) (body only)

Le estamos muy agradecidos por haber adquirido el impresor FA-20 de CASIO equipado con interfaz para cassette. Este impresor es compatible con las computadoras de bolsillo de CASIO, pudiendo imprimir listas de programas, o, cuando se lo utiliza como interfaz para cassette, permite almacenar datos y programas en cintas magnetofónicas.

Las conexiones incorrectas no dañarán al impresor, computadora o magnetófono, pero pueden borrar los programas o datos almacenados en la memoria o en la cinta. Por lo tanto, preste atención al conectar el impresor.

Este manual trata la operación del FA-20 y su conexión a una computadora o a un magnetófono. Sírvase leer detenidamente las instrucciones aquí contenidas a fin de poder utilizar el impresor correctamente.