RONALD JACK

TIME RECORDER

OPERATION MANUAL

RJ-880   RJ-880A

We express our appreciation for your installation of this time recorder. This is a full-automatic time recorder controlling the function of time recording with a microcomputer. Time control will definitely be made in a more effective manner by the use of electronic programming.

Before using this time recorder, please be sure to read this manual carefully so you can have many years of reliable use.

Function \ Model	RJ-880	RJ-880A
Music bell	◯	◯
Power output	◯	◯
Perpetual calendar	◯	◯
Summer time / day light saving time	◯	◯
Auto compensation	◯	◯
Card type selection	◯	◯
Two color printing	◯	◯
48 hours complete security for power failure	◯	◯
Auto column shift / Auto IN/OUT shift		◯
Master / Slave connection function	Slave	Master

Compensation after power failure : Within 36 months after power failure occured. When power has been restored, the machine requires no adjustment programming.

Specification:

1. Power supply		100,110,117,200,220,240 V AC (as designated),50/60 Hz, Monophase.
2. Power consumption		Normally 2W (50W at peak operation)
3. Standard time signal		Quartz oscillation
4. Time accuracy		± 3 seconds per week
5. Security for power failure		Full operation of all functions for 48 hours after power failure, and menory back-up for subsequent 36 months.
6. Use environment		Temperature: 0 ℃ ~ 40 ℃ Humidity: 40% ~ 90% (without coundensation)
7. External dimensions		276mm (w) x 238mm (H) x 180mm (D)
8. Weight		Approx. 8.5 kg.
9. Standard time card		86mm (w) x 186mm (H)
10. Accessories		Operation manual 1 copy Fuses 5 pcs Keys 2 pcs Dust cover 1 pc Lithium battery 1 pc

【Features】

1. Programmed control of work hours
   Printing line, 2 color ribbon switching, IN/OUT position, internal melody and external time signal can be optionally set in 69 steps.
2. Weekly program
   Day of the week can be programmed in weeks.
3. Automatic month-end adjustment
   Month-end adjustment is automatically made irrespective of odd and even months or ordinary or leap year, if it is programmed.
4. Time signal function
   Time signal can be set from 0-99 seconds.
5. IN/OUT function (Applicable for full function models)
   IN/OUT spacing position can be automatically set by electronic programming.
   (1) Time can be printed only in the position specified by programming (Tamper-proof function)
   (2) Time can be printed in other spaces than specified by manually moving the IN/OUT position.
6. Security for power failure
   (1) Ni-Cd battery ensures printing of time during power failure for about 48 hours.
   (2) When the battery voltage drops too low for the time to be printed, the LCD display goes off. Both time and programs are retained by a lithium battery for about 36 months.
   (3) After power is restored, the printing wheels will automatically advance to the present time.
7. Time display
   (1) The display of digital series is a large, easy-to-read LCD. It shows date, AM/PM time, day of week and other codes.
   (2) The display of analog series uses a pointer and a small LCD panel for display functions.
8. Special functions (overseas specifications)
   Summer time control and automatic month-end adjustment by a special calendar are available.
   (1) Functions vary with the model. See the table of functions by model on the preceding page.
   (2) Specifications and functions are subject to change without notice for improvements.

Table of Contents

1. Preparation

1. How to open and close the case

— To open the case, insert the key, turn it clockwise and pull the case toward you.

— To close the case, push it to the end after abjusting its bottom end to LH and RH side guides on the bottom plate of the main body. Press it in untill it reaches the back plate and lock it in place by turning the key counter-clockwise. (Figure 1)
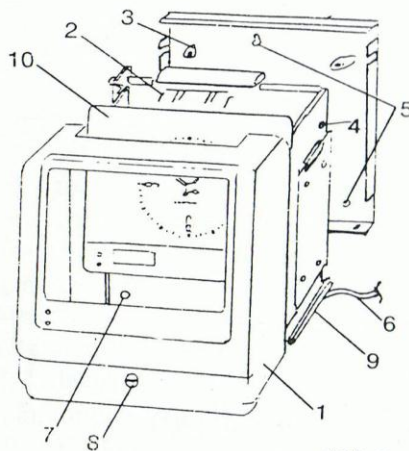

Figure 1

(1) Case
(2) Body
(3) Back plate
(4) Body attaching screws
   (M4 tap, 1pc each on right and left)
(5) Wall mounting hole (3 places)

(6) Power cord
(7) Voltage selector
(8) Key
(9) Bottom plate
(10) Display and keyboard

2. Installation

— Install the recorder on a stand **75** cm to **80** cm high.
— When installing on the wall, remove two (M4) screws (4) the back plate (3), (Figures 1A and 1B) and secure the back plate to the wall with screws.
Set the inner, bottom end of the bottom plate (9) of the body (2) on the bottom of the back plate, align the body attaching screws holes (4) and secure the body and back plate with screws.

*Care for installation

This machine uses a sophisticated microcomwuter and precise components and parts. Avoiding installing the machine in any of the following places because its installation in such places can cause trouble to its operation.

(1) Places where it may be exposed to the direct rays of the sun or high temperature such as near a heater.
(2) Places where temperature are extremely high.
(3) Places where it may be exposed to rain water or high humidity conditions, resulting in condensation.

3. Function of fuses

Totaling **6** fuses used in this machine, **3** pcs on power PC board and **3** pcs on main PC board, The functions as belows:

(1) Power PC board:

F1: For AC power, it blows out when voltage is too high. Spec AC **250V 1A**

F2: For external time signal, it blows out when the load of signal is too heavy or short-circuit. Spec. AC **250V 3A**
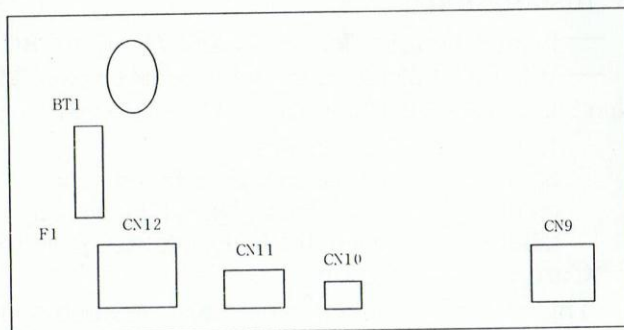
(2) Main PC board:

F1: For AC power to protect the main board. Spec. AC 250V 3A

4. Connection to power outlet:

1: Connect AC plug cord to the machine and the power outlet, the power lamp will light (green)

2: Connect the battery plug to CN11 of the main PC board.

3: Insert the lithium battery with negative pole (-) down to the socket of main board.

Fig. 2

5. Setting functions switches

Fig.3

These switches are normally set as shown. Do not disturb them except switches 1. If the switches have been turned, it's necessary to press RESET switch to have the new program function.

Setting of esch switch prior to shipment from the factory is indicated with an underline. (e. g. ON)

S2-1 Auto IN/OUT Position Select Switch (valid only for full function models)
— ON— Cards çan be printed only in the card printing position specified by the program. Even if an attempt is made to print the card in any other location by shifting the card by hand, the recorder will not print the card but return the card to the position specified by the program.
— OFF— Cards can be printed in places other than the IN/OUT position set by the program. In about 30 seconds after card is printed in a shifted place, the IN/OUT position will automatically return to the positiom set by the program. If no printing is performed after IN/OUT position has been shifted, it will aoutomatically return to the original programmed position in 30 seconds.

S2-2 Minute Signal / External Signal Select Switch
— ON— Minute signal internal drive type. Advances the present time with internal minute signals. Standard independently operated system.
— OFF— Controls time by linking the recorder with another recorder and receiving minute signals from this recorder. Turn off this switch when using your time recorder as a slave unit in order to synchronize minute advances between time recorders.

S2-3 Horizontal / Vertical Printing Select Switch
— ON — Standard system to print the date or day of the week vertically and IN/OUT horizontally. (Horizontally mode)
— OFF — Weekly system to print the day of the week vertically and IN/OUT horizontally. Subject to various restrictions. (Do not turn off this switch for normal use.)

S2-4 Expanded Function Switch
— ON — Not used (Normally, do not turn it on)
— OFF — For present functions.

S2-5 Special Function Switch
— ON — For special functions.
— OFF — For present functions. (Normally, do not turn it off)

S2-6 Reserved Function Switch
— ON — Normally, do not turn it on.
— OFF — For present functions.

S1 ⊡ Reset switch (RESET)
— Press this switch when operation has become abnormal or when the red pilot HOLD on P. C. board has turned on. Operation will return to normal without affecting the present time, program memory, etc. and the pilot HOLD on P. C. board will go off.
— If abnormal display or operation should persist even after RESET is pressed, press operation keys HO and ST in that order. In this case, program data must be entered again.

Note: Manipulation of keys HO and ST will perform initialization.
Operation of RESET switch will perform partial clear while protecting memory.
When power failure occurred and the voltage of battery droped lower than 12V , the LCD display will go off and the operation will stop and the recorder will be set to memory protection status. When the power is resumed, the recorder will compensate the time automatically.

· Jumper Setting:

This time recorder incorporates two (2) melodies, JP3 is for melody selecting, which has been set in factory on PIN1 and PIN2. To change the melody, JP3 can be set on PIN2 and PIN3.

VR1 is a volume switch, turn it clockwise to highten up the melody, turn it counter - clockwise to low down the melody.

2. Display (Name of each pilot and digital display)

Figure 4

(1) AM / PM
(2) Date
(3) Hour
(4) Minute
(5) Day of week
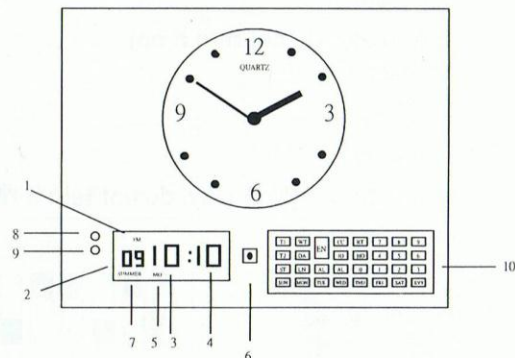
(6) LCD display
(7) Summer time
(8) Power pilot (green)
(9) Hold (red)
(10) Keyboard

3. Keyboard

1. Name and functions:

Key	Name	Function
T1	Date	Set the present date
T2	Time	Set the present time
ST	Summer time	Set summer time
WT	Wheel time	Set the time for printing wheels
DA	Printing line	Set the printing line
EN	Enter	Input data in memory

RT	Return	Return to present time display
LN	Duration of melody	Set duration of melody alarm
AL	Alarm	Set time of alarm
CC	Color changing	Set time of color change
I/O	IN / OUT	Set time of IN / OUT auto-shift
CL	Clear	Clear input date
0 — 9	Number keys	Enter number
SU — SA	Day of week	Input day of week
EV	Everyday	Input all days of week
HO + ST	Remove	Remove all date and back to intialized state

2. How to use HO and SY keys

Press HO to held time and set the second to zero, the colon on LCD display will stop blinking, then press HO to run second again.

Press SY will result minute of LCD display and pointer forwarding 1 minute & printing wheel also forward 1 minute. Keep pressing this 1 key to run both " Minute" and the printing wheel (s) every 0.3 second.

4. Present Date (T1)

Set the " Year ", " Month ", " Date " and " Day of week ", proceed as follows :
1. Press T1 key.
2. Type " Year "," Month "," Date " and " Day of week ", in that order, each in 2 digits. Use the specific key for day of week.
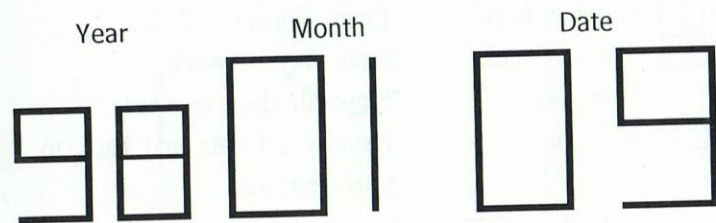3. Press EN key.

Example of operation :
Presaent time : January 9 , 1998 (Thursday)

	Year	Month	Date	Week	Enter
T1 →	9 8	0 1	0 9	TH →	EN

The LCD display will go off after depressing [EN] key. If you want to check the date you have just entered, press [T1] key. The display will show as belows :

After checking time, press [RT] key to get back normal operation

Year   Month   Date

98 01 09

THU

Fig.5

## 5. Present Time (T2)

Set time card " Space Code " , " Hour " , " Minute " and " Time System " proceed as follows :

1. Press [T2] key.
2. Type. " Space Code " , " Hour " , " Minute " and " Time System " in that order, each in 2 digits, time system in 1 digit.
3. Press [EN] key.

Example of operation :

Present time :   03 : 05 (24-hour system) with top blank printing line for 1 day's space.

Space Code	Hour	Minute	Time System	Enter	Return
[T2] → [0] [1]	[1] [5]	[0] [5]	[4] →	[EN] →	[RT]

Date   Hour   Minute

09 15:05
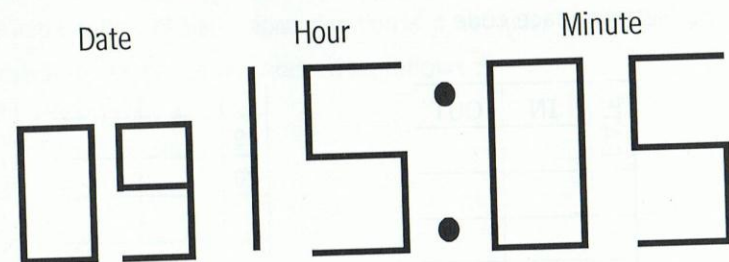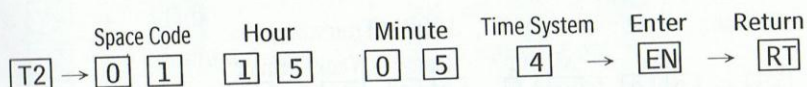
THU
24-hour system

Figure 6

To check the " Space Code " , " Hour " , " Minute " press [T2] , the LCD will display as below :
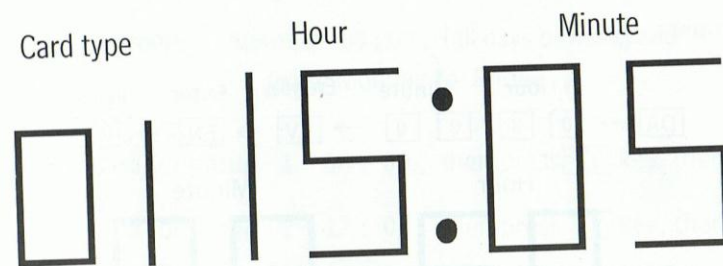
Card type   Hour   Minute

01 15:05

Figure 8

After checking them, press RT key to get back to normal operation.

Set the top blank space on the day following the payroll cut-off date :

Example of setting space code :

DATE	IN	OUT
1		
2		

19		
20		

Time card type 01   Time card type 21

Figure 9

6. Setting Program

1.Setting Printing Line (DA)

Time of day change is pre-set on 00 : 00 . Proceed to chang the
time of day change to be 03 : 00 as follows :
(1) Press DA key.
(2) Type 03 : 00 each in 2 digits, then press EV key.
(3) Press EN key.

Example :

Hour   Minute   Everyday   Enter   Return

DA → 0 3 0 0 → EV → EN → RT

Hour   Minute

$$03\ 00$$

| SUN | MON | TUE | WED | THU | FRI | SAT |

Figure 10

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2.Setting Alarm Signal Duration (LN)

The initial setting of alarm signal duration is 5 seconds. If you want to change the
duration to 15 seconds, proceed as follows :
(1) Press LN key.
(2) Type 15 seconds.
(3) Press EN key.

Example :

Second   Enter   Return

LN → 1 5 → EN → RT

If you want to check the data you have just entered, press LN key, the
LCD will display as below :

$$15$$

Figure11

3.Setting Time of Alarm (A L)

Totaling 32 groups can be set and can be operated at any given time or
on any day of week.

Example of operation : Alarm at 08 : 00 , (all days of week) and at 17 : 00
(from Monday to Friday)

(1) Press AL key.
(2) Type data for group 1   08 : 00 , then press EV key, then press
EN key.
(3) Type data for group 2   17 : 00 , then press EV key, then press
SU and SA keys. Press EN key to input data to memory.

Example :

Group 1   Hour   Minute   Everyday   Enter

AL → 01   0 8 0 0 → EV → EN

Group 2   Hour   Minute   Everyday   Sunday   Saturday   Enter

→ 02   1 7 0 0 → EV → SU → SA → EN

—10—

If you want to check or change the data, press AL key, the LCD will display data of group 1 you have just entered. If you don't want to change it , press EN key to move to group 2 . Following this procedure to the specific group you want to change, then type the time you want to correct. Press EN key to input data to memory.

To delete some of the alarm groups you have entered, following the aforementioned procedure to the group which you want to delete, then press CL key. The LCD will display 6666 , then press EN key.

4. Setting Time of Color Change (CC)

Totaling 18 groups can be set and can be operated at any given time or on any day of week. Odd group imprint RED color, even group imprint BLUE color.

Example of operation: RED printing at 08 : 01 (all days of week) and BLUE printing at 17 : 00 (from Monday to Friday)

(1) Press CC key.

(2) Type data for group 1 08 : 00 , then press EV key, then press EN key.

(3) Type data for group 2 17 : 00 , then press EV key, then press SU and SA keys. Press EN key to input data to memory.

Example :

	Group 1	Hour		Minute		Everyday	Enter
CC →	01	0	8	0	1	→ EV →	EN

	Group 2	Hour		Minute		Everyday	Sunday	Saturday	Enter
→	02	1	7	0	0	→ EV →	SU →	SA →	EN

If you want to check or change the data, press CC key, the LCD will display data of group 1 you have just entered. If you don't want to change it, press EN key to move to group 2 . Following this procedure to the specific group you want to change, then type the time you want to correct. Press EN key to input data to memory.

To delete some of the groups of color change you have entered, following the aforementioned procedure to the group which you want to delete, then press CL key. The LCD will display 6666 , then press EN key.

5. Setting Time of IN / OUT Auto-shift Position (IO)

Applicable for full functions model only. Totaling 18 groups can be set and can be operated at any given time or on any day of week.

The position code has to be typed before input the time of auto-shift. The position codes as bellows :

11. Morning IN	12. Morning OUT
13. Afternoon IN	14. Afternoon OUT
15. Overtime IN	16. Overtime OUT

Example of operation: Morning IN 07 : 00 (everyday)

Afternoon OUT 04 : 00 PM (from Monday to Friday)

(1) Press IO key.

(2) Type position code 11 , then type 0700 ,then press EV key, then press EN key.

(3) Type position code 14 , then type 1600 ,then press EV key, then press SU and SA keys, then press EN key to input data to memory.

Example :

	Position Code		Hour		Minute		Everyday	Enter
IO →	1	1	0	7	0	0	→ EV →	EN

	Position Code		Hour		Minute		Everyday	Sunday	Saturday	Enter
→	1	4	1	6	0	0	→ EV →	SU →	SA →	EN

If you want to check or change the data, press IO key, the LCD will display data of group 1 you have just entered. If you don't want to change it, press EN key to move to group 2 . Following this procedure to the specific group you want to change, then type the time you want to correct. Press EN key to input data to memory.

To delete some of the groups of IN/OUT auto-shift you have entered, following the aforementioned procedure to the group which you want to delete, then press [CL] key. The LCD will display 666666 , then press [EN] key.

7. Summer Time (ST)

To set or delete summer time , 2 groups must be set simultaneously. Set group 1 to start summer time, group 2 to end summer time. The starting and ending time may be set to any " HOURS " between 0 AM and 9 AM.

Example of operation: Starting date and time: April 1 , 04 : 00
　　　　　　　　　　　　Ending date and time: October 1 , 04 : 00

(1) Press [ST] key.

(2) Type summer time starting date and time 0401 4 ,then press [EN] key.

(3) Type summer time ending date and time 1001 4 ,then press [EN] key.

Example :

(Auto display)

Group 1 　Month　 Date 　　Hour 　 Enter

[ST] → 0 1 　[0][4] 　[0][1] 　→ [4] → [EN]

(Auto display)

Group 2 　Month　 Date 　　Hour 　 Enter

→ 0 2 　[1][0] 　[0][1] 　→ [4] 　→ [EN]

* Note : Type " Hour " in 1 digit and which will not be shown on LCD.

If you want to check or change the data, press [ST] key, the LCD will display data of group 1 you have just entered. If you don't want to change it, press [EN] key to move to group 2 .
To delete data of summer time, following the aforementioned procedure to the group you want to delete, then press [CL] key. The LCD will display 6666, then press [EN] key to input data to memory.

8. Printing Wheels Adjustment (WT)

To synchronise the time of printing wheels and the time that CPU send to LCD display , press the [WT] key and then use a time card to print the time of printing wheels. Type the time of printing wheels , the printing wheels will be synchronized automatically and display will go off. Press [RT] key , the LCD will display the present time.

(1) Press [WT] key.

(2) Use a time card to print the time of printing wheels.

(3) Type the date, hour and minute (each in 2 digits) and then press [EN] key. The LCD display will go off.

(4) Press [RT] key.

9. Printing Line Adjustment

Repeatedly push the printing line lever (Fig . 11) untill the card printing line is adjusted to the right position.
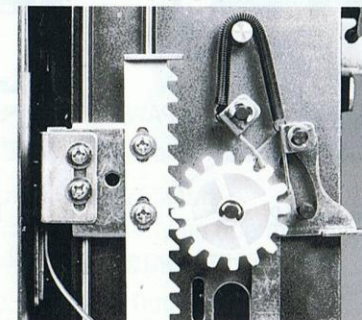

S : Printing line lever

Figure 11

10. Replacement of the Ink Ribbon Cassette

To replace the ink ribbon cassette, proceed as follows :

(1) Pull out the shaft (1) in figure 12 toward left.

* The left-hand of the shaft is locked by a pawl, and the right-hand of the shaft is locked by a spring, unlock them to pull out the shaft.

(2) Open the display block by pulling and turning its left-hand side toward you.

(3) Press leaf spring (3)on the right-hand side of printing block (2) toward the printing block side and disengage knob (5) of ribbon cassette (4) from the leaf spring by slightly pressing the knob toward the right.

(4) As shown in fig. 12 , remove the old cassette from holder (6) and install a new one.

(5) Tighten the ribbon by turning take-up knob (7) and adjust the ribbon
untill it comes between the printing wheel and printing head (8) and
the cassette is engaged with ribbon feed gear (9) .

* If the cassette cannot be engaged with ribbon feed gear (9), slightly
turn take-up knob (7) untill the cassette is engaged with the gear.

(6) Return the printing block to the original position, insert the shaft and
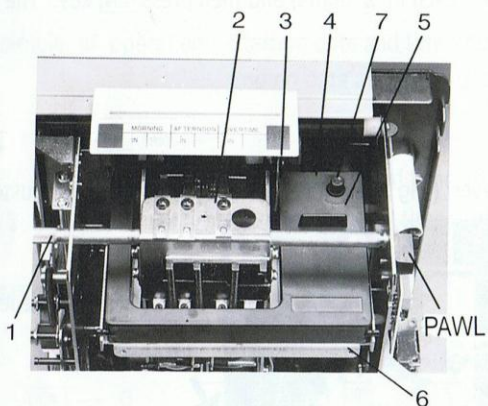return the display unit to the original position.
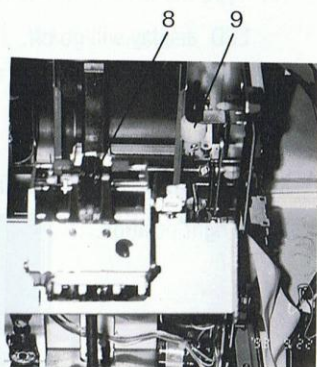

Figure 12   Figure 13

11. Power Board and Connection of External Signal Power Board :
Power Board :

F1: Fuse for AC power 1 A.

F2: Fuse for external sounding device 3A.

If the current consumption of external siren or bell exceeds 1A, you are
requested to install an additional relay to control buzzer.

* Please note that the power supply of external siren or bell must be
independent.
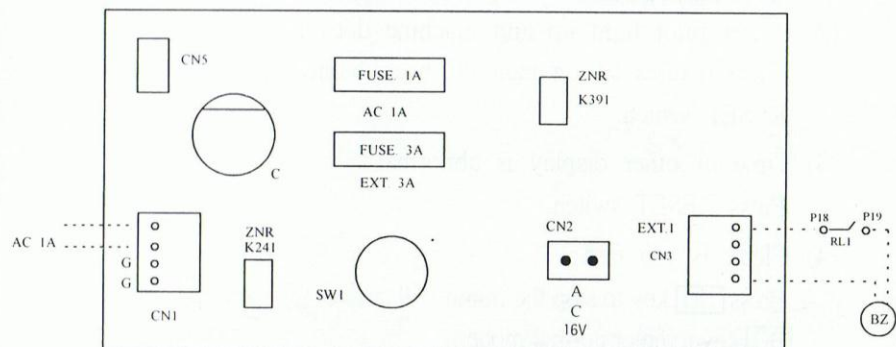
12. Printing during power failure and internal battery

(1) Operation during power failure
The recorder can completely be operated even during power failure
by its internal battery for about 48 hours.

(2) Power failure for long hours
If power failure continues for longer hours than the guaranteed
period (48 hours) , cards can no longer be printed because the
mechanical sections stop their operation. However, program data
can be protected for 36 months by the lithium battery on PC board.

(3) Operation when power has been restored
Use the recorder as it is. The machine requires no adjustment
Programming when power has been restored.

(4) Internal battery
The internal battery is used as a back-up power for the machine.
Disconnect the power source frequently can reduce the battery
life.

13. Trouble Shooting

(1) Power pilot goes off and machine does not function :
Check if the power cord disconnected? or fuse F1 on power PC
board burned out?

(2) Power pilot light up and machine does not function :
Check if fuses F1 on main PC board burned out? and then press
RESET switch.

(3) Time or other display is abnormal :
Press RESET switch.

(4) Clock is too fast :
Press HO key to stop the minute till correct time and then press
HO key to enter normal mode.

(5) Clock is too slow :
Press SY key to fast advance minute.

(6) Printed time does not agree with displayed time :
Adjust the printing wheels by referring to printing wheel adjustment
Page 14.

14. Warranty

Your time recorder has been manufactured under strict quality control
and has passed rigid inspection before shipment. The machine is
warranted free of charge for one year after sale. If you have questions,
inquiries, etc., contact your distributor.