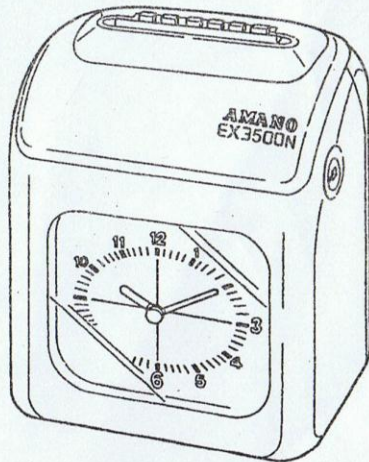**AMANO**

ELECTRONIC TIME RECORDER

EX3500N

OPERATION MANUAL

ENGLISH／中国语

INTRODUCTION

Read this manual carefully for safe and proper use of the product. Also, after reading this manual, preserve it at a handy location for quick reference at needs.

◆EX3500N time recorders will not operate normally unless installed in a proper environment. Do not install them outdoors or where they are exposed to rain.
◆The specifications, appearance, and descriptions are subject to change due to improvement.
◆This manual has been carefully prepared, but if you find any errors or any descriptions which you cannot understand clearly, contact the dealer from whom you have bought your time recorder.
◆Use or reproduction of this manual in part or in whole without the prior permission of AMANO Corporation is forbidden by law.

TABLE OF CONTENTS

FOR THE OPERATIONAL SAFETY

Carefully read to fully appreciate the following warnings and cautions before starting use of the equipment.

⚠Warning
• Do not use with any power voltage other than that indicated on the product. This could cause fire or electric shock.
• Do not overload power outlet. This could cause fire or electric shock.
• Do not connect or disconnect power plug with wet hand. This could cause electric shock.
• Do not damage or break power cord. If a heavy object is put on it, or the cord is pulled or bent forcibly, the cord may be damaged and this could cause fire or electric shock.
• Do not remodel the time recorder. This may cause fire or electric shock.
• If any abnormality occurs such as smoke, smell or heat, disconnect the power plug from the power outlet and contact your dealer. Continued use of the time recorder in the above cases could cause fire or electric shock.
• If foreign matter (metal piece, water or other liquid) get inside the time recorder, immediately disconnect the power plug from the power outlet and contact your dealer. Continued use of the time recorder in this case cause fire or electric shock.
• Before connecting time signal line, disconnect power plug of time signal buzzer, etc. from power outlet. If connected as is. it could cause fire or electric shock. (Only for models which can be connected to external time signal device)
• To avoid fire hazard, use only a fuse of the correct type, voltage rating, current rating as specified by the manufacturer:

Power source	Fuse
110-120V AC	250V,700mA
220-240V AC	250V,T500mA (Time Lag) with a low breaking capacity.

Use of any other materials for fuse will cause fire.
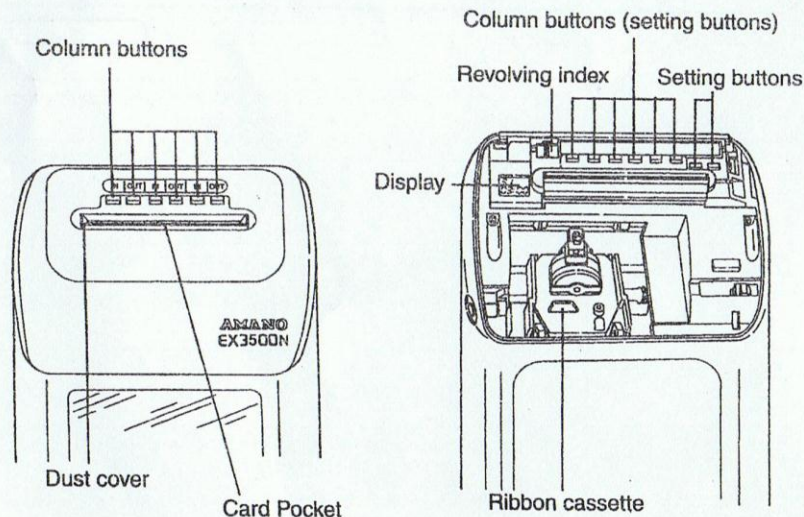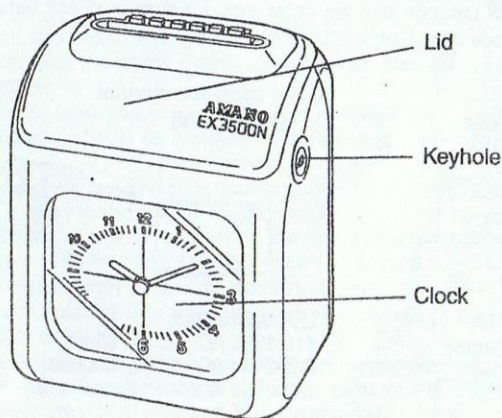Make sure that the fuse has the proper specified capacity prior to use.

• When replacing the fuses, do not use fuses that exceed the specified capacity or use wire and silver paper.
Use of any other materials for fuse will cause fire.
Make sure that the fuse has the proper specified capacity prior to use.

NAMES OF PARTS

Names of Exterior Parts

Lid

Keyhole

Clock

Column buttons

Dust cover

Card Pocket

Column buttons (setting buttons)

Revolving index   Setting buttons

Display

Ribbon cassette

Programming Section

Remove the upper case to set each item. (See Page 13.)   Turn the dial at the left side to rotate the setting index. Setting index ①, setting index ② and setting index ③ can be selected.
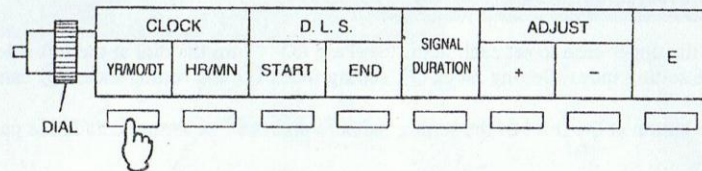Press the button at the front of the setting index to operate. For setting details see pages 14~ 34.
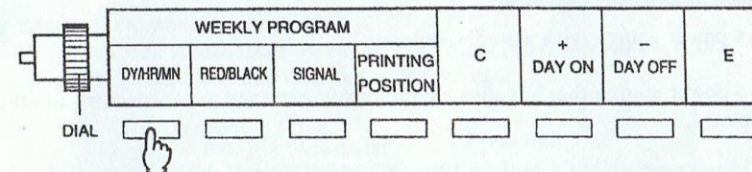
Setting Index ①

DIAL

PAY END BLANK CURRENT W.	DAY CHANGE	CLOCK SETTING		IMPRINT	ADJUST		E
		+MIN.	–MIN.		+	–	
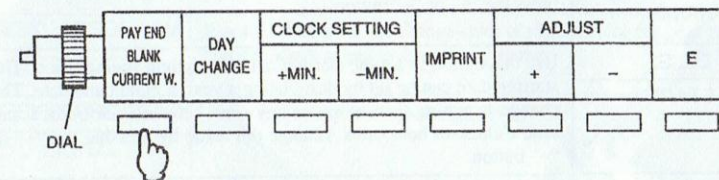
PAY END BLANK CURRENT W.	This button is used to select a pay period ending date or week, a blank row position on time card (monthly pay only) or a current week (in case of bi-weekly pay only). Press the "+" or "–" button to change the value.
DAY CHANGE	This button is used to change the time at which the date changes over. Press the "+" or "–" button to change the value.
CLOCK SETTING + MIN.	Each time this button is pressed, the clock advances one minute. Keep it pressed to advance the minute quickly. When this button is pressed, the clock will start running with the second set to "00" automatically.
CLOCK SETTING – MIN.	Each time this button is pressed, the clock will decrement one minute. Keep it pressed to decrement the minute quickly. When this button is pressed, the clock will start running with the second set to "00" automatically.
IMPRINT	Use this button to change print formats such as card type. 24 hours/12 hours indication printing change, minute imprint, day of the week, etc.
ADJUST +	Press this button once to increase a set value by 1. Hold this button down to increase the set value quickly.
ADJUST –	Press this button once to decrease a set value by 1. Hold this button down to decrease the set value quickly.
E	Press this button to register set values.

	CLOCK		D. L. S.		SIGNAL	ADJUST		
DIAL	YR/MO/DT	HR/MN	START	END	DURATION	+	–	E

CLOCK YR/MO/DT	Use this button to change year, month, and day. To change these values, press the "+" or "–" button.
CLOCK HR/MN	Use this button to change hour and minute. To change these values, press the "+" or "–" button.
D.L.S. START	Use this button to set the starting date of daylight savings time. The starting date can be set by designating a year, a month and date. The change-over time can be set at any time between one o'clock and nine o'clock in hour units. Change the value by pressing the "+" or "–" button.
D.L.S. END	Use this button to set the ending date of daylight savings time. If both the starting and the ending dates are set to the same date, the set daylight savings time is canceled. If only the starting date or the ending date is set, the daylight savings time function will not operate. Change the value by pressing the "+" or "–" button.
SIGNAL DURATION	Use this button to change time signal duration. Change the value by pressing the "+" or "–" button. The initial value is 5 seconds.
ADJUST +	Press this button once to increase a set value by 1. Hold this button down to increase a set value quickly.
ADJUST –	Press this button once to decrease a set value by 1. Hold this button down to decrease a set value quickly.
E	Press this button to register set values.

	WEEKLY PROGRAM				C	+	–	
DIAL	DY/HR/MN	RED/BLACK	SIGNAL	PRINTING POSITION		DAY ON	DAY OFF	E

|	
WEEKLY PROGRAM DY/HR/MN	Press this button to set day of the week, hour, and minute in a weekly program.
WEEKLY PROGRAM RED/BLACK	Press this button to set change-over of ribbon color for printing time cards in black or red in a weekly program.
WEEKLY PROGRAM SIGNAL	Press this button to set time signal.
WEEKLY PROGRAM PRINTING POSITION	Press this button to set shift of print column
C	Hold this button down for more than 2 seconds to cancel the content of the weekly program number displayed. (If this button is held down for less than 2 seconds, only the screen contents will be canceled, and the existing program contents will remain.)
+ DAY ON	When setting a weekly program, press this button to stop the day of the week from blinking and make it effective for the program. Hold this button down to advance any value quickly.
– DAY OFF	When setting a weekly program, press this button to extinguish the day of the week blinking and make it ineffective for the program. Hold this button down to decrease any value quickly.
E	Press this button to register set values.

BEFORE OPERATION

Power Source

· Use a power source with a stable voltage.

· Use a power source that supplies continuous voltage and is independent of other equipment.

· The time recorder has a built-in lithium battery, on which the inner clock runs and which stores the programming data. (The battery is effective for three years of cumulative power failure hours.)

Installation

Proper installation and good power conditions will enable you to operate the time recorder for a long time.

Installation location

· Prepare a stand about 75cm high.
· Install the time recorder horizontally.
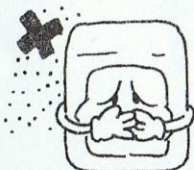

75cm
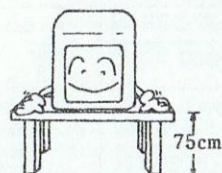
Improper installation locations

· Places exposed to direct sunlight or close to heat sources
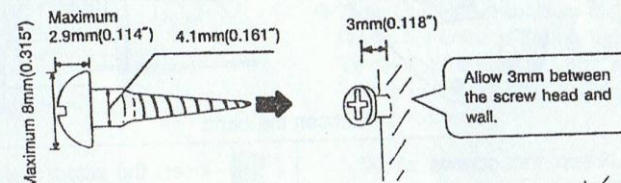
· Places exposed to rain

· Dusty or unstable places

· Places exposed to strong vibration or shocks

Wall Mounting

1 Insert a screw into the wall.
Place one screw about 94cm (37") to 124cm (48.8") above the floor. At this height the time recorder is easy to use.

Maximum 8mm(0.315")
Maximum 2.9mm(0.114")   4.1mm(0.161")   3mm(0.118")

Allow 3mm between the screw head and wall.

2 Insert a second screw into the wall.
Place this screw 13cm to 13.5cm immediately below the first screw.
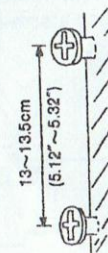
3 Peel off the protective paper.

Protective Paper

13~13.5cm (5.12~5.32")
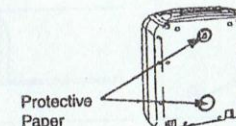
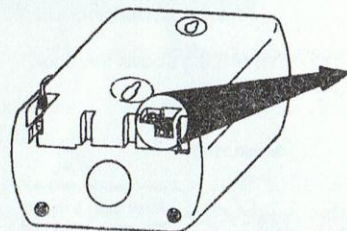**4** As shown in the figure, attach the bracket for wall mounting to the back of the case.
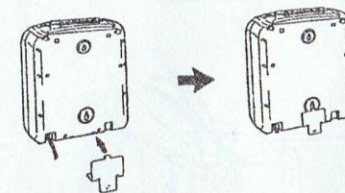
5 Hook the unit on the screws through the holes on the back of the case.
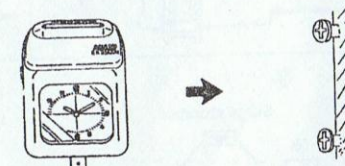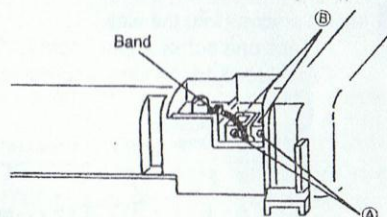
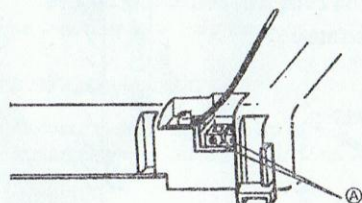**6** Secure the bracket to the wall with the lower screw.
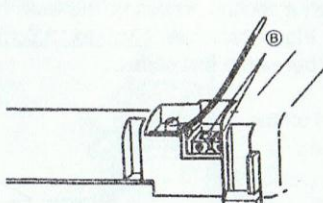
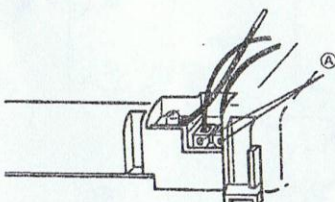## How to Connect an External Time Signal Unit

Band

Loosen the band

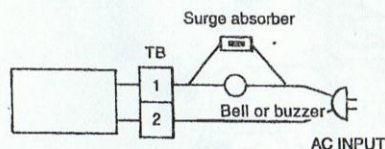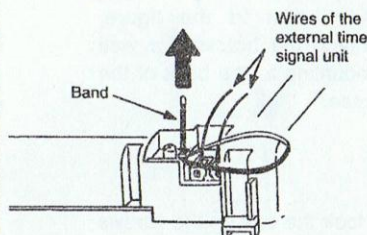**1** Loosen the screws at "A", using a screw driver.

Ⓐ

2 Insert the wires of the time signal unit into "B".

Ⓑ

3 Tighten the screws at "A", using the screw driver.

Ⓐ

4 Bind the wires with the band.

Wires of the external time signal unit

Band

Surge absorber

TB

1

2

Bell or buzzer

AC INPUT

Contact output : Dry contact
Contact capacity : 250VAC, 0.5A or less
          24VDC, 0.5A or less

Install a surge absorber on the signal unit side

OPERATION

Selecting the Print Column

Press an appropriate IN or OUT button to select the print position for time cards.

IN	OUT	IN	OUT	IN	OUT
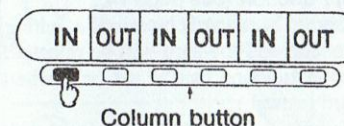
Column button

◆ Time cards are printed in the column where the column button light is on. To change the print position, press the button corresponding to the desired print position.

◆ Print Position Shift
The print position shifts automatically at the IN or OUT time set.
(Refer to "Setting a Shift of Print Position" for details.)
Even if Print Position Shift has been previously set, print position can be selected manually.
(Refer to "Setting Imprint" for details.)

Inserting Time Cards
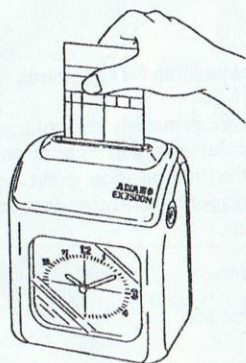
Insert a time card lightly in the card pocket.
The card is automatically pulled in and printed.

Surface Detection Function (see page 14.)
If a time card is inserted backwards by mistake, a long "beep" sound will occur, and the card will be rejected. (The surface detection function can be set only when the Monthly pay card is used.)

◆Time cards are automatically pulled in. Do not push them in the card pocket by force, and do not try to pull them out during printing.
◆If a time card is inserted upside down by mistake, it will be printed. Be careful to correctly insert time cards in the card pocket.
◆Do not insert any objects other than time cards.

Initial Print after Time Change

If the clock time has been adjusted to a time change of 5 minutes or more from the currently displayed time, the first printing after the change was made will print the "Hour" in small print. If the change in time is less than 5 minutes, the printing will remain as normal.

8:20 — the "Hour" in small print

8:28 — normal print

• The "Hour" is in small print for the first printing when the EX3500N is first operated or after the time has been changed ±5 minutes or more.
• If the parameters of daylight savings time is set on the day when the automatic time change is to take place, the first printing after the automatic time change will have the "Hour" in small print.
• If a time change of ±5 minutes or more is made and the clock time is then switched back to within ±5 minutes of the "actual time" (including the time that has elapsed), the printing will be normal.

Note : Since this is an easily recognized feature on time cards, it can also be used as a method of indicating any unauthorized time changes.
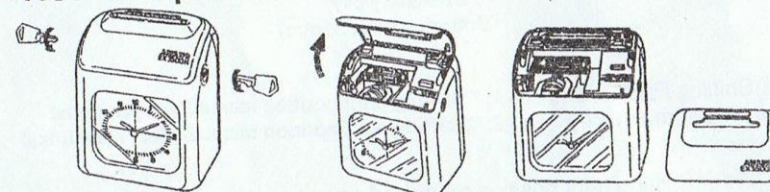
SETTING

Opening and Closing the Lid

⚠Warning

🚫 • Do not remodel the time recorder.
This may cause fire or electric shock.

⚠ Caution

🚫 • The operator should be grounded first before starting maintenance and setting.
If maintenance and setting is started before he is properly grounded, the equipment may be damaged by static electricity.

How to Open the Lid

1. Insert the keys into the keyholes on both sides of the case and turn the keys in the direction as shown in the figure above.

2. Open the lid.

3. Remove the lid

＊When you remove the keys, be sure to return the keyholes to their original position.
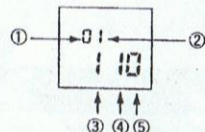
How to Close the Lid

1. Connect the hooks on the lid with those on the case.

2. Bring the lid down toward you. Push down firmly on the front of the lid until it clicks into place.

3. When the lid is closed, the hands of the clock will move, stop momentarily at 12 o'clock, then indicate the current time.

Setting Imprint

① → ┌─ 0 1 ─┐ ← ②
       | 1 10 |
       └──────┘
        ↑ ↑ ↑
        ③ ④ ⑤

Print formats are changed as follows :

①Card Type
(with 6mm pitch)
Select from 1~7 the mode which applies to the card you use.
*With 7mm pitch (special order), choose either "2" or "4".

0: Monthly pay surface detection not operational
1: Monthly pay surface detection operational
2 : Upper step Weekly pay (Bottom space : 23mm)
3 : Upper step Weekly pay (Bottom space : 35mm)
4 : Lower step Weekly pay (Bottom space : 23mm)
5 : Lower step Weekly pay (Bottom space : 35mm)
6 : Bi-weekly pay (Bottom space : 23mm)
7 : Bi-weekly pay (Bottom space : 35mm)

} Upper step

} Lower step

} Bottom space

②Shifting Print position manually

1: "Shifting print position manually" operational
2: "Shifting print position manually" not operational

1 : "Shifting print position manually" operational
Both automatic shifting of print column with weekly program and manual selection using column button can be used together.
When column button is pressed, the column position will be operational for 10 seconds. After printing is completed, or if no print is completed within 10 seconds after the column button is pressed, print position will return to the column which has been set by weekly program.
If no weekly program is set, column button will be operational continuously.

2 : "Sifting print position manually" not operational
Print column shifts only by weekly program : Column position cannot be shifted manually.
If weekly program has not been set, note that printing cannot be done even if the card is inserted.

③Hour Indication
1 : 24 hours (0~23 hours) (0 is not printed at the tens digit of hour. Example : 9:00)
2 : 12 hours (AM/PM hours) (Minute is underlined for PM. Example : 9:00)
3 : 24 hours (0~23 hours) (0 is printed at the tens digit of hour. Example : 09:00)

④Minute Indication
1 : Minutes
2 : 1/100 hour A
3 : 1/100 hour B
4 : 1/10 hour

1/100 hour A, 1/100 hour B, and 1/10 hour:

| Minute	0	1	2	3	4	5	6	7	8	9	~	29	30	31	32	33	34	35	~	54	55	56	57	58	59
1/100 hour A	00	02	03	05	07	08	10	12	13	15	~	48	50	52	53	55	57	58	~	90	92	93	95	97	98
1/100 hour B	00	00	00	05	05	05	10	10	10	15	~	45	50	50	50	55	55	55	~	90	90	90	95	95	95
1/10 hour	0	0	0	0	0	0	1	1	1	1	~	4	5	5	5	5	5	5	~	9	99	9	9	9	9

⑤Day of The Week indication
0 : Date 1 : English 2 : Spanish 3 : French
4 : German 5 : Italian 6 : Japanese
7 : DAY No. (1~7) 8: No indication

Example : Set "Monthly pay surface detection operation", "Shifting print position manually operational", "12-hour system printing", "1/100 hour B" and "Date printing".

1 Turn the dial of the setting index.
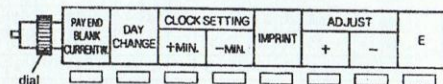
2 Press the IMPRINT button. The initial value will appear.

3 To change the card type, press the "+" or "−"button and set "1". Press the "E" button to register it.

4 To change the shifting print position manually, press the "+" or "−" button and set "1". Press the "E" button to register it.

5 To change the hour indication, press the "+" or "−" button and set "2". Press the "E" button to register it.

6 To change the minute indication, press the "+" or "−" button and set "3". Press the "E" button to register it.

7 To change the day of the week indication, press the "+" or "−" button and set "0". Press the "E" button to register it.
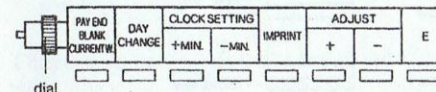

Changing Pay Period Ending Date

Pay period ending date can be set three ways : weekly pay, bi-weekly pay and monthly pay. Select the desired one. Make the selection when setting imprint. (See pages 14~16.)

⟨Weekly pay⟩

Example : Set the pay period ending day to Monday.
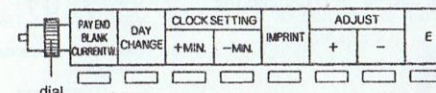
1 Open the lid and turn the setting index.

2 Press the PAY END button, and the initial value will appear. (The **5** mark blinks at "FR".)

— Pay period ending day

3 Press the "+" or "−" button and bring the **1** mark to "MO". Press the "E" button, and the blinking **1** mark stops blinking. The setting has been registered.

⟨Bi-weekly pay⟩

Example : Set the pay period ending day to Sunday and the current week to the second week.
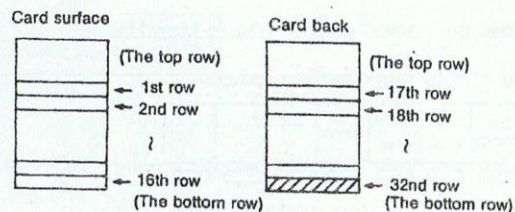
1 Open the lid and turn the setting index.

2 Press the PAY END button, and the initial value will appear. (The **5** mark blinks at "FR", and the current week is the first week.)

— Pay period ending day
— current week

3 Press the "+" or "−" button and bring the **7** mark to "SU". Press the "E" button, and the blinking **7** mark stops blinking. The setting has been registered.

4 Press the "+" or "−" button to change the number to "2". Press the "E" button, and the blinking number stops blinking. The setting has been registered.

<Monthly pay>
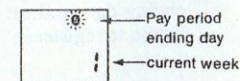
For the "Monthly Pay", assign "pay period ending date" and "blank row".
A blank row means a row is left blank out of the 32 rows on the front and back of a time card. The top row of the front is numbered 01 and the last row on the back is numbered 32. The desired row can be set by designating the number.

Card surface

(The top row)
← 1st row
← 2nd row
ϟ
← 16th row
(The bottom row)

Card back

(The top row)
← 17th row
← 18th row
ϟ
← 32nd row
(The bottom row)

Example : Set the pay period ending date to the 25th and the blank row to the 17th.

1 Turn the dial of the setting index.

dial
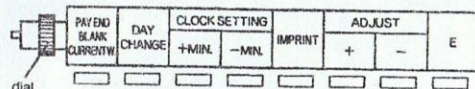
2 Press the "PAY END" button, and the initial value will appear. (The pay period ending date is the 31st, and the blank row is the 1st.)

`3 01`

Pay period Blank row
ending date
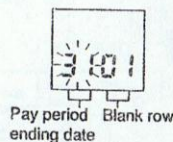
3 Press the "+" or "–" button to change the pay period ending date and set 25 in place of 31. Press the "E" button to register it.

`25 01`

4 Press the "+" or "–" button to change the blank row and set 17 in place of 01.
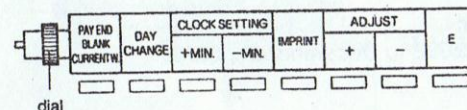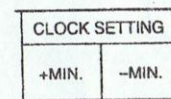Press the "E" button to register it.

`25 17`

Setting the Clock

There are two procedures : setting the minutes, and setting the date and hour.

Setting Minutes

1 Turn the dial of the setting index.

dial

2 Correct the time by using the "+ MIN." and "– MIN." buttons.

CLOCK SETTING	
+MIN.	–MIN.

Each time this button is pressed, the clock advances one minute. Keep it pressed to advance the minute quickly. When this button is pressed, the clock will start running with the second set to "00" automatically.

Each time this button is pressed, the clock will decrement one minute. Keep it pressed to decrement the minute quickly. When this button is pressed, the clock will start running with the second set to "00" automatically.

`8:30`

When [+MIN.] or [–MIN.] button is pressed, the display will change to the clock.
·If the clock is advanced or delayed only a few minutes, adjust the time by pressing [+MIN.] or [–MIN.] button.
If the clock is advanced more than ten minutes, adjust the time by pressing [HR/MN] button described in Setting the Date.
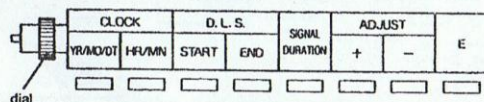(See page 20.)

Setting the Date

Year, month, date, hour, and minute are set as follows.

> Press the "+" or "−" button to change values. Be sure to press the "E" button before setting a new item or when registering values.
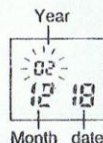
\<Setting of Year, Month, and Date\>

Example : Change December 18, 2002 to December 21, 2002.
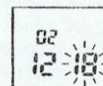
1 Turn the dial of the setting index.

	CLOCK		D. L. S.		SIGNAL DURATION	ADJUST		E
	YR/MO/DT	HR/MN	START	END		+	−	

dial

**2** Press the "YR/MO/DT" button.

Year

02
12 18

Month date

3 Press the "+" or "−" button to change the year and press the "E" button. If it is not necessary to change the year, press the "E" button.

02
12 18

4 Press the "+" or "−" button to change the month and press the "E" button. If it is not necessary to change the month, press the "E" button.

02
12 18

5 Press the "+" or "−" button to change the date. Press the "E" button to register the setting. If it is not necessary to change the date, press the "E" button.
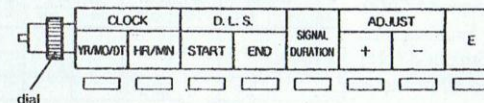
02
12 21
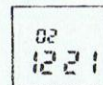
For year setting, 00 to 95 are 2000s and 96 to 99 are 1900s.

\<Setting of Hour and Minute\>

Example : Change 18:00 to 8:30.

1 Turn the dial of the setting index.

	CLOCK		D. L. S.		SIGNAL DURATION	ADJUST		E
	YR/MO/DT	HR/MN	START	END		+	−	

dial

2 Press the "HR/MN" button.

18:00

3 Press the "+" or "−" button to change the hour. Press the "E" button to register the setting.

08:00

4 Press the "+" or "−" button to change the minute. When the "E" button is pressed, the clock hands will move to match the set time and the clock will start at 00 second.

08:30

This time recorder has been set so that row of the time card shifts at AM3:00. Printings from AM3:00 on current day to and AM2:59 the following day are printed on the same printing row.

Printing row shifts at AM3:00. If work of one day finishes later than AM3:00, IN time and OUT time will be printed in different rows.

DATE	MORNING		AFTERNOON		OVERTIME		HRS.
	IN	OUT	IN	OUT	IN	OUT	
1	22:25						
2			5:12				

If one day work normally exceeds AM3:00, alter the day change time to some other time (when no one is working).
Alter the day change time by hour units with the minutes place fixed to 00.

Example : Set the day time change at 6:00.

1 Turn the dial of the setting index.
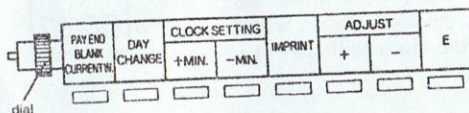
2 Press the "DAY CHANGE" button. The initial value will appear. (3:00)

```
03:00
```

3 Press the "+" or "–" button, then set "06:00". Press the "E" button, and the blinking display will stop blinking. The setting has been registered.

```
06:00
```

When the day change time is set to 6:00, time will be printed on the same row until 5:59 the following day.

DATE	MORNING		AFTERNOON		OVERTIME		HRS.
	IN	OUT	IN	OUT	IN	OUT	
1	22:25			5:13			
2							

Time signal means that an external time signal device (bell, buzzer, etc.) sounds at the beginning/end of work time. Setting of time signal can be done using the weekly program. (See page 29.)

Example : Change the initial value to 10 seconds.

1 Turn the dial of the setting index.
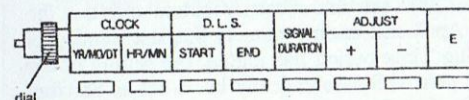
2 Press the SIGNAL DURATION button, and the initial value (5 seconds) will appear.

```
05
```

3 Press the "+" or "–" button to set the value at 10. Press the "E" button to register the setting.

```
10
```

Note: If duration is set to 00 second, the time signal will not sound even if the time signal has been set using weekly program.