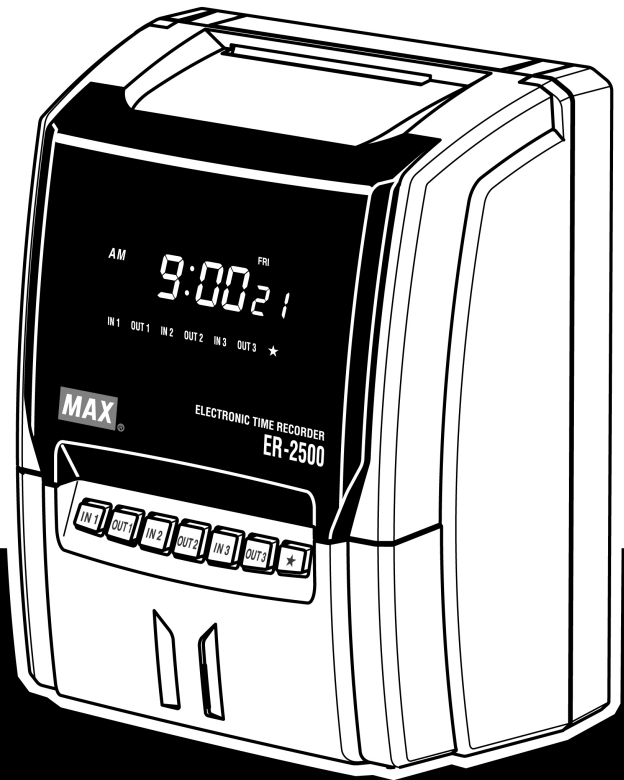




ELECTRONIC TIME RECORDER

ER-2500

INSTRUCTION MANUAL



☆Before using this instrument, read this manual to ensure safety warning and instructions. Keep this instruction manual with the instrument for future reference.

CONTENTS

BEFORE USE.....	3
SAFETY INSTRUCTIONS.....	3
ACCESSORIES.....	5
MAIN FEATURES.....	8
PARTS DESCRIPTIONS.....	9
HOW TO OPEN AND CLOSE FRONT COVER.....	9
DISPLAY AND KEYBOARD.....	9
DISPLAY LAYOUT	9
KEYBOARD LAYOUT.....	11
HOW TO OPERATE.....	13
HOW TO SET UP.....	14
KEY-CARD.....	14
BASIC OPERATION OF SETTING OR CHANGING DATA.....	14
SETTING MODE 1.....	18
MACHINE MODE 1 (CODE 01).....	18
MACHINE MODE 2 (CODE 02).....	18
PAY CLOSING DATE (CODE 03).....	20
60 OR 100 SCALE (CODE 04).....	20
DAILY TOTAL HOURS (CODE 05).....	22
SETTING MODE 2 (YEAR, MONTH, DATE, HOUR, AND MINUTE)	26
SETTING MODE 3.....	26
HOLIDAY (CODE 01).....	27
SPECIAL DAY (CODE 02).....	28
LINE SHIFT TIME, IN/OUT AND OVERTIME WORKING	
(CODE 03 to 10, # FOR SPECIAL DAY: CODE 11 to 17).....	28
DAYLIGHT SAVING TIME (CODE 18 to 19).....	30
SETTING OPTION.....	33
CONNECTION TO EXTERNAL TIME SIGNAL (ER-2500R).....	36
REPLACING INK RIBBON CASSETTE.....	37
WALL MOUNTING AND LAID-DOWN POSITION INSTALLA-	
TION 38	
ERROR CODES.....	40
CAUTION CODE.....	40

TROUBLE SHOOTING.....	42
SPECIFICATIONS.....	43

1 BEFORE USE

1-1 SAFETY INSTRUCTIONS

■INDICATIONS

This instruction manual and the product use various indications to help you use this instrument safely and properly. The following describes those indications.



WARNING: Negligence could lead to serious injury or death.



CAUTION: Negligence could lead to an injury, damage of your property, or cause loss of created data.



Describes operations that may cause damage to the instrument and require a repair, or operations that require resetting the machine, etc., to restore the condition of the instrument.



Describes the points of operation and tips.



Describes a functional precaution.

■SYMBOLS



Denotes "What you should be aware of."



Denotes "What you must not do." An indication in or near this symbol shows a specific prohibition.



Denotes "What you must do." An indication in this symbol shows a specific instruction.

 WARNING	
	Clean a power cord plug regularly. Dust on the plug could cause a fire.
	Obtain power directly from a single plug socket. Avoid connecting many wires to one plug socket. It could lead to a fire.
	Do not connect/disconnect a power plug with a wet hand. It could cause an electric shock.
	Do not operate the instrument, if it is out of order. If it is operated in an out-of-order state, such as it is smoking, emitting an abnormal sound, or smelling funny, it could cause a fire or electric shock. Disconnect a power plug immediately from a socket and contact your dealer/distributor for a repair.

	• Disconnect a power plug before connecting to an external time signal.
	A lithium battery is used inside for memory backup. Never replace the lithium battery by yourself. Contact your dealer/distributor for replacement.

 CAUTION	
	Data stored in the internal memory cannot be stored permanently. We will not be responsible for damages and lost profits caused by loss of data attributed to battery consumption, trouble, repair, and so on.
	Never disassemble or modify this instrument. It could cause a fire, electric shock, or other problems.
	• Do not insert foreign substances such as fingers, pens, wire, or paper into this instrument. It could damage the instrument or cause a fire. • Use correct supply voltage. Other voltage level could damage the instrument. • Do not splash water or chemicals on the instrument. If water gets inside the instrument, disconnect a power plug immediately from a plug socket and contact your dealer/distributor for a repair. It could damage the instrument or cause a fire or electric shock. • Do not put paper or cloth on the instrument. It could cause a fire. • Do not place any heavy material on a power cord. It could cause damage or a fire.
	• Never touch a metallic part of the instrument. • Never touch a printer head. It is very hot just after printing and you could get burned. Also, dirt on your hand could cause trouble to the printer head.
	• When the instrument is not going to be operated for a long period of time, be sure to disconnect a power cord from a power socket for your safety. • When disconnecting a power cord, be sure to hold a power plug. Do not pull on the power cord, or the cord could be broken and cause a fire or electric shock.

1-2 ACCESSORIES

This instrument comes with the following accessories. Confirm that they are included before using the machine.

1. Instruction manual



: 1 booklet

2. "Key-Card"



: 10-pcs.

3. Screws for wall mounting

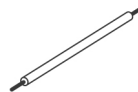


: 4-

pcs.

(Only for ER-2500R)

Wire for external time signal



: 1 pc.

REQUEST

- ◆ Do not drop or hit the instrument.



- ◆ Install this instrument away from the following places:

1. Any place that is not level or that is subject to vibration.



2. Any place that has dust or high humidity. Keep beverages and liquid containers away from this instrument.



3. Any place that the temperature goes below 0 °C /32 °F or over 40 °C/104 °F .



4. Any place that catches direct sunlight or is located close to a heat source.



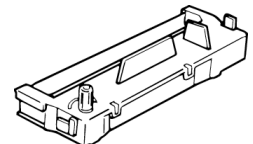
- ◆ Do not insert cards or paper other than the specified time cards for this instrument. Do not use time cards that are bent or torn.



- ◆ Be sure to use a dry cloth for cleaning. Do not use solvents (alcohol, benzene, thinner, etc.) or a damp cloth.



- ◆ Do not re-ink cartridge. Replace with ink ribbon cassette ER-IR102E.



- ◆ Do not hang this instrument on a wall using anything other than the included plate for wall mounting.
- ◆ A plug socket should be installed near the instrument and be easily accessible.
- ◆ A 7-minute break is required after continuous printing 150 times.

1-3 MAIN FEATURES

1. Up to 6 columns (Up to 4 columns when using the Daily Total Hours function).
2. Two color printing (Black/Red).
3. Printing Daily Total Hours calculation and Accumulation of Daily Total Hours. (Excluding ER-2500E).
4. Can select regular working time or overtime as Daily Total Hours.
5. Setting up to 22 times for internal time signal. (ER-2500R also has a relay for external output.)
6. Setting another program for Special day.
7. Printing regular minutes (1/60) or 1/100th of an hour.
8. Can select one of three styles from the following table.

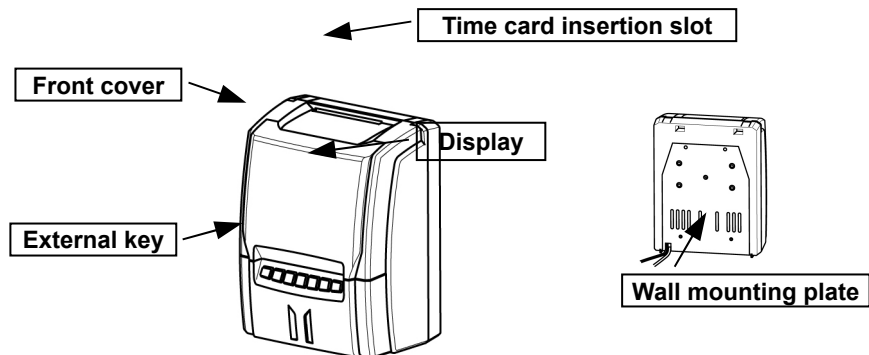
Capacity of employees	Setting program
150 employees	Without Daily Total Hours function
130 employees	Using Daily Total Hours function (Without Next Day Overtime function)
50 employees	Using Daily Total Hours function and Next Day Overtime function

9. Printing "Late-in: ►", "Early-out: ◀", "Overtime: ■" and "Next Day Overtime: ★" symbols.
10. Can select fully automatic or manual operation.
11. "Key-Card" security system.
12. Three kinds of installation (Table Top, Wall Mounting, and Laid Down Position).
13. Three kinds of pay period formatting (Monthly, Weekly or Bi-weekly).
14. Daylight Saving Time (for summer time).
15. Printing past midnight in the same line of the day by Line Shift Time.
16. Built-in lithium battery protects the clock, calendar and program data for 5 years.
17. Twelve / twenty-four hour display formats.
18. Time / Date / Month / Year are already preset.

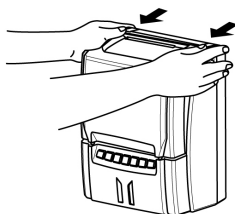


Some areas or countries will be required to reset the time.

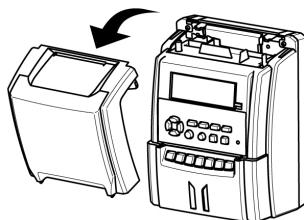
2 PARTS DESCRIPTIONS



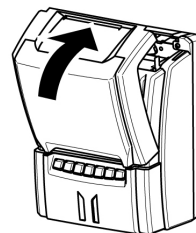
3 HOW TO OPEN AND CLOSE FRONT COVER



Pull as illustrated above.



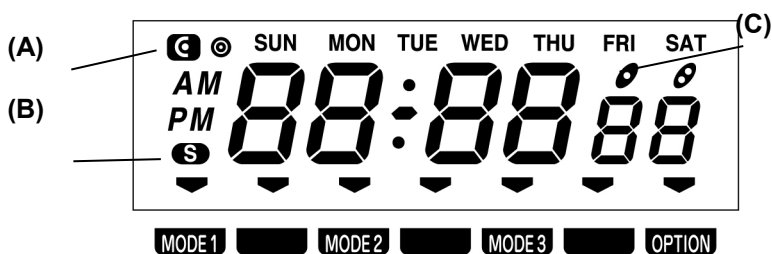
Remove a front cover.



Push as illustrated above.

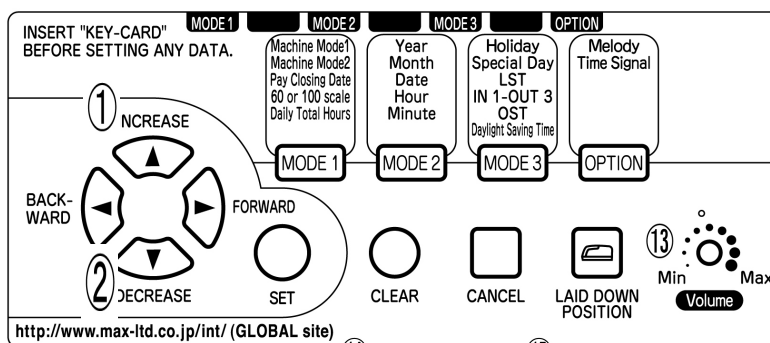
4 DISPLAY AND KEYBOARD

4-1 DISPLAY LAYOUT

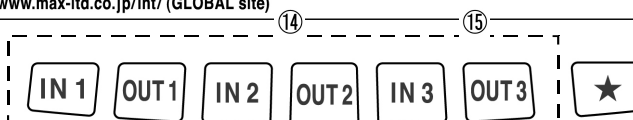


- (A)  symbol appears under setting mode.
- (B)  symbol appears Daylight Saving Time activates.
- (C)  symbol appears while you set IN/OUT program for Special day.

4-2 KEYBOARD LAYOUT



[External Keys]



Functions of keys

No.	Description	Functions
①	INCREASE	To increase number.
②	DECREASE	To decrease number.
③	BACKWARD	To back setting item (Code No.).
④	FORWARD	To forward setting item (Code No.).
⑤	MODE1	To set Machine Mode1, Machine Mode2, Pay Closing Date, 60 or 100 scale and Daily Total Hours. (See [7] on page 11)
⑥	MODE2	To set Year, Month, Date and current Time. (See [8] on page 15)
⑦	MODE3	To set Holiday, Special Day, Line Shift Time, Working Time (IN1 ~OUT3, OST) and Daylight Saving Time. (See [9] on page 15)
⑧	OPTION	To set Melody and Time signal. (See [10] on page 19)
⑨	SET	To register all setting data and return to the start of setting mode.
⑩	CLEAR	To initialize current setting item.
⑪	CANCEL	To return to the start of setting mode without registration.
⑫		To turn the time on the display upside down.
	(LAID DOWN POSITION)	

	KEY)	
⑬	 VOLUME	To adjust volume of internal time signal. (See [10] on page 19)
⑭		To select a desired column.
⑮	 (NEXT DAY OVERTIME KEY)	To print the time in the same line of the day after Line Shift Time.

5 HOW TO OPERATE

⚠ CAUTION

!	Install this instrument on a level place.
⊘	Do not install on or near a place subject to vibration.

1. AUTOMATIC OPERATION

Column to be printed is shifted automatically in the order of **IN1**, **OUT1**, **IN2**, **OUT2**, **IN3** and **OUT3** without pressing any external keys.

1. Insert time card to the position where automatic feed starts.
2. Time card will be ejected automatically after printing the time.

2. MANUAL OPERATION

ER-2500 allows manual operation to select a desired column to be printed on.

1. Select a desired column to print by pressing “**IN1**,” “**OUT1**,” “**IN2**,” “**OUT2**,” “**IN3**” or “**OUT3**” key.
2. ▼ symbol appears at the selected column on the display.
3. Insert time card to the position where automatic feed starts.
4. Time card will be ejected automatically after printing the time.



REQUEST

1. Do not keep holding the time card during printing.
2. Do not pull or push time card with your hand.
3. Do not cover any of small holes at both edges on time card.



MEMO

1. If “**E-01**” appears on the display, the time card has been inserted incorrectly. (See [14] on page 24)
2. When using Daily Total Hours function, ER-2500 automatically prints Daily Total Hours in the 5th column and Accumulation of Daily Total Hours in the 6th column after printing the time in the 4th column.

6 HOW TO SET UP

6-1 KEY-CARD

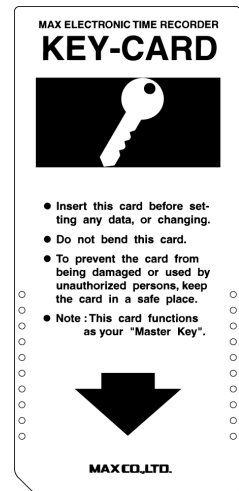
“Key-Card” must be used to set or change any data.

Operation

1. Insert “Key-Card.”  symbol appears on the display to indicate the **starting of setting mode**.
2. After setting or changing data, insert “Key-Card” again.
 symbol disappears.

REQUEST

Keep “Key-Card” in a safe place to prevent it from being damaged, lost or used by an unauthorized person.



If you do not touch any keys for 60 seconds,



symbol disappears automatically.

6-2 BASIC OPERATION OF SETTING OR CHANGING DATA

Operation

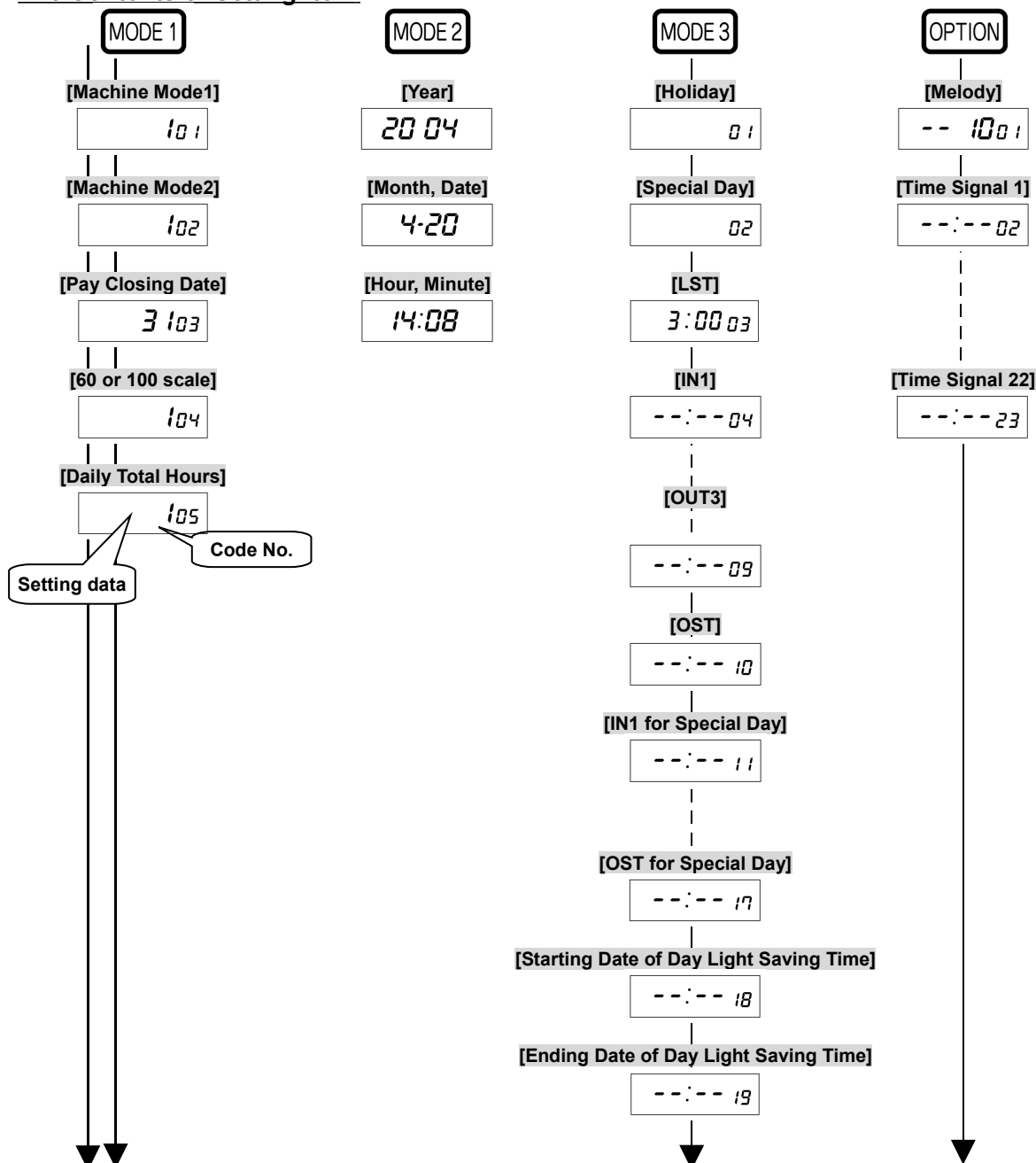
1. Insert “Key-Card.”
2. Press “MODE 1,” “MODE 2,” “MODE 3” or “OPTION” key to select setting mode.
Then first setting item (**CODE 01**) is displayed.
3. Press “◀ (BACKWAR)” or “▶ (FORWARD)” key to select setting item.

4. Press “▲ (INCREASE)” or “▼ (DECREASE)” key to change data. (The changeable data blinks.)
5. If the changed data is OK, press “◀ (BACKWARD)” or “▶ (FORWARD)” key to move to next setting item.
6. Press “SET” key to register all changed data and to return the start of setting mode. Alternatively, you can press “▶ (FORWARD)” key in last setting item to register all changed data and to return to the **start of setting mode**.



By pressing “**CANCEL**” key during setting, you can return to the start of setting mode without registration.

The Contents of Setting Item



- ◆ After pressing “**SET**” key, all changed data in each mode are registered and the display returns to the **start of setting mode**( symbol appears on the display.).
- ◆ Alternatively, you can press “ (**FORWARD**)” key in last setting item to register all changed data, and then the display returns to the **start of setting mode**.



1. When selecting **"3(Without Daily Total Hours function)"** in **Machine Mode 1** setting (**CODE 01 in MODE 1**) or using ER-2500E, **Daily Total Hours** setting (**CODE 05 in MODE1**) is not displayed.
2. When setting no **Special Day** in **Special Day** setting (**CODE 02 in MODE 3**), **"CODE 11"** to **"CODE 17"** are not displayed.

7 SETTING MODE 1

Press “MODE 1” key after inserting “Key-Card.”

7-1 MACHINE MODE 1 (CODE 01)

Press ▲ or ▼ to select a desired number from the following table and set “Capacity of Employees.” According to the number, each function will be activated.

◆ Initial data=1 (In case of ER-2500E: 3)

Number	Capacity of Employees	Function		Printed result on Time Card	
		Daily Total Hours	Next Day Overtime	5 th column	6 th column
1	50	Use	Use	Daily Total Hours	Accumulation of Daily Total Hours
2	130	Use	Not use	Daily Total Hours	Accumulation of Daily Total Hours
3	150	Not use	Use	Time	Time



1. When selecting “1,” you cannot use “IN3” and “OUT3” external keys. When pressing these keys, “E-90” appears on the display.



2. When selecting “2,” you cannot use “IN3,” “OUT3” and “Next Day Overtime()” keys. When pressing these keys, “E-90” appears on the display.
3. ER-2500E cannot select “1” and “2,” because ER-2500E does not have Daily Total Hours function.

7-2 MACHINE MODE 2 (CODE 02)

Press ▲ or ▼ to select a desired number from the following table and set “12/24-Hour Format” and “Pay Period.”

◆ Initial data=1

Number	12/24-Hour Format	Pay Period
1	12H	Monthly
2	24H	
3	12H	Weekly
4	24H	
5	12H	Bi-weekly
6	24H	



1. The time is printed only in 24-hour format.
2. When setting in the “**Laid Down Position,**” only 24-hour format is displayed.

7-3 PAY CLOSING DATE (CODE 03)

After setting “Machine Mode2,” “Pay Closing Date” is shown on the display.

Monthly

Press ▲ or ▼ key to select “Pay Closing Date.” When the display shows a desired closing

date, press “▶” key

From 103 t
o 3 103

Weekly

Press ▲ or ▼ key to select “Pay Closing Date”(from today to the next 6 days).

When the display shows SUN 7-2 103 sing da SAT 7-27 03 key.

From t
o

Bi-weekly

Press ▲ or ▼ key to select “Pay Closing Date”(from today to the next 13 days).

When the display shows SAT 7-27 03 sing da SAT 8-03 03 key.

Fro t
m o



In Europe, set Date first and Month second.

7-4 60 OR 100 SCALE (CODE 04)

Press ▲ or ▼ to select a desired number from the following table and set “Time Printing Style.”

◆ Initial data=1

Number	Time printed on IN/OUT columns	Daily Total Hours	Accumulation of Daily Total Hours
1	Regular minutes (1/60)	Regular minutes (1/60)	Regular minutes (1/60)
2	1/100 th of an hour	1/100 th of an hour	1/100 th of an hour
3	Regular minutes (1/60)	1/100 th of an hour	1/100 th of an hour



1. ER-2500E cannot select "3."
2. When using 1/100th of an hour as "**Time Printing Style**", ER-2500 prints the adjusted time as shown on the "**Equivalent Time Chart.**" And Accumulation of Daily Total Hours is adjusted after calculating in Regular minutes (1/60).
(See page 14)

Equivalent Time Chart

Regular minutes (1/60)	1/100 th of an hour (1/100)	Regular minutes (1/60)	1/100 th of an hour (1/100)	Regular minutes (1/60)	1/100 th of an hour (1/100)
00	0.00	20	0.34	40	0.66
01	0.02	21	0.35	41	0.68
02	0.04	22	0.36	42	0.70
03	0.05	23	0.38	43	0.72
04	0.06	24	0.40	44	0.74
05	0.08	25	0.42	45	0.75
06	0.10	26	0.44	46	0.76
07	0.12	27	0.45	47	0.78
08	0.14	28	0.46	48	0.80
09	0.15	29	0.48	49	0.82
10	0.16	30	0.50	50	0.84
11	0.18	31	0.52	51	0.85
12	0.20	32	0.54	52	0.86
13	0.22	33	0.55	53	0.88
14	0.24	34	0.56	54	0.90
15	0.25	35	0.58	55	0.92
16	0.26	36	0.60	56	0.94
17	0.28	37	0.62	57	0.95
18	0.30	38	0.64	58	0.96
19	0.32	39	0.65	59	0.98

7-5 DAILY TOTAL HOURS (CODE 05)

Press ▲ or ▼ to select a desired number from the following table and set “**Style of Daily Total Hours.**” ER-2500 prints Daily Total Hours in the 5th column and Accumulation of Daily Total Hours in the 6th column automatically while printing in the 4th column.

◆ Initial data=1

Number	Style of Daily Total Hours
1	Regular work time
2	Overtime



1. If **“2(Overtime work)”** is set but Starting time of Overtime Work is not set in **“MODE 3,”** ER-2500 prints “0:00” or “0.00” in the 5th column.
2. If **“3(No use the Daily Total Hours function)”** is selected in **“Machine Mode1 (CODE 01)”**, this setting item (CODE 05) does not appear.

Printing Examples of Daily Total Hours

1. Setting data: CODE 01=1 (Using Daily Total Hours function)

CODE 04=1 (Regular minutes (1/60))

D		IN1		OUT1		IN2		OUT2		IN3		OUT3
1	←	9:01	←	11:59	←	12:59	←	16:40		6:39		6:39
2	↷	8:58	↷	12:01	↷	13:10	↷	18:27		8:20		14:59

[Daily Total Hours] [Accumulation of
Daily Total Hours]

2. Setting data: CODE 01=1 (Using Daily Total Hours function)

CODE 04=3 (1/100th of an hour)

D		IN1		OUT1		IN2		OUT2		IN3		OUT3
1	←	9:01	←	11:59	←	12:59	←	16:40		6.65		6.65
2	↷	8:58	↷	12:01	↷	13:10	↷	18:27		8.34		14.98

[Daily Total Hours] [Accumulation of
Daily Total Hours]

#1: In case of 1/100th of an hour, Accumulation of Daily Total Hours is changed from Regular minutes (14:59) to 1/100th of an hour (14.98). The accumulated hours are not same as the hours added 6.65 to 8.34.

3. Setting data: CODE 01=3 (Not using the Daily Total Hours function)

CODE 04=1 (Regular minutes (1/60))

D		IN1		OUT1		IN2		OUT2		IN3		OUT3
1	←	9:01	←	11:59	←	12:59	←	16:40		6.65		6.65
2	↷	8:58	↷	12:01	↷	13:10	↷	18:27		8.34		14.98



1. When time is not printed in the 4th column, ER-2500 does not print the Daily Total Hours and Accumulation of Daily Total Hours. If you cannot print the time in the 4th column by using automatic operation, use manual operation by pressing **“OUT2.”**
2. When IN and OUT have not been printed in pairs, ER-2500 can not output Daily Total Hours and Accumulation of Daily Total Hours.

8 SETTING MODE 2 (YEAR, MONTH, DATE, HOUR, AND MINUTE)

Press “**MODE 2**” key after inserting “**Key-Card.**”

[Example] 1:35 (PM), 21st May, 2004

Procedure [MODE 2]	Display
Press “ MODE2 ” key.	20 04
Current Year is shown on the display. Press ► to display the Month/Date.	5-18
Press ► to blink the Date.	
Press ▲ or ▼ until the display shows “21.”	5-21
Press ► to display the Hour/Minute.	13 00
Press ► to blink the Minute.	
Press ▲ or ▼ until the display shows “35.”	13 35
Press the “ SET ” key to register the changed data.	PM 1:35 21
The display returns to the start of setting mode.	



1. **S** symbol appears during Daylight Saving Time activates.
2. In Europe, set Date first and Month second.
3. Clock starts at “00” seconds when the “**SET**” key is pressed.

9 SETTING MODE 3

Press “**MODE 3**” key after inserting “**Key-Card.**”

9-1 HOLIDAY (CODE 01)

Set a day of the week as “**Holiday.**” Press the following keys to light on/off the day of the week.

The days of weeks that are lit up mean “**Holiday.**”

◆ Initial data=Nothing (All days are lit off.)

Key	IN 1	OUT 1	IN 2	OUT 2	IN 3	OUT 3	★	▲	▼
Day of the week	SUN	MON	TUE	WED	THU	FRI	SAT	ALL days are lit on.	ALL days are lit off.



1. Times on Holidays are printed in red color without any symbols.

2. Daily Total Hours on Holiday does not correspond to IN/OUT program in MODE 3.

9-2 SPECIAL DAY (CODE 02)

Set a day of the week as “**Special day.**” Press the following keys to light on/off the day of the week. The days of the week that are lit up mean “**Special day.**”

◆ Initial data=Nothing (All days are lit off.)

Key	IN 1	OUT1	IN 2	OUT2	IN 3	OUT3	★	▲	▼
Day of the week	SUN	MON	TUE	WED	THU	FRI	SAT	ALL days are lit on.	ALL days are lit off.



1. You can set IN/OUT program for Special day in **CODE 11** to **CODE 17**.

2. Special day and Holiday cannot be set to the same day of the week.
“**E-91**” appears on the display.

9-3 LINE SHIFT TIME, IN/OUT AND OVERTIME WORKING (CODE 03 to 10, # FOR SPECIAL DAY: CODE 11 to 17)

Set LST, IN/OUT and OVERTIME program to activate printing function of symbols, “**Late-in:** ► ,” “**Early-out:** ◀ ,” “**Overtime:** ▮ .”

Daily Total Hours is calculated according to this program.

CODE No.	Contents of setting program	Initial data
03	LST (Line Shift Time=Day change time)	3 : 00
04	IN1 (Working start time)	-- : --
05	OUT1 (Working end time)	-- : --
06	IN2 (Working start time)	-- : --
07	OUT2 (Working end time)	-- : --
08	IN3 (Working start time)	-- : --

09	OUT3 (Working end time)	--:--
10	OST (Starting time of Overtime work)	--:--
11	IN1 for Special Day (Working start time)	--:--
12	OUT1 for Special Day (Working end time)	--:--
13	IN2 for Special Day (Working start time)	--:--
14	OUT2 for Special Day (Working end time)	--:--
15	IN3 for Special Day (Working start time)	--:--
16	OUT3 for Special Day (Working end time)	--:--
17	OST for Special Day (Starting time of Overtime work)	--:--



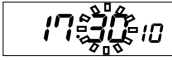
1. The time is displayed in only 24-hour format.

2. The **CODE 11** to **17** are displayed only when Special day is set in **CODE 02**.

3. During setting the **CODE 11** to **17** for Special day,  symbol appears on the display.

4. Times with "Late-in" and "Early-out" symbols are printed in red color.

Example	Line Shift Time (Day change time)	: 4 : 00
	Starting time of work	: 9 : 00
	Starting time of lunch	: 12 : 00
	Ending time of lunch	: 13 : 00
	Ending time of work	: 17 : 00
	Starting time of Overtime work	: 17 : 30

Special day	Procedure	Display
	Press ► to display CODE 03 . Current Line Shift Time is shown on the display.	
	Press ▲ or ▼ until the display shows "4:00."	
	Press ► to display CODE 04 (IN1) .	
	Press ► or ▼ until the display shows "12:00." Press ► until the display shows CODE 05 (OUT1) .	
	Press ► or ▼ until the display shows "13:00." Press ► until the display shows CODE 06 (IN2) .	
	Press ► or ▼ until the display shows "17:00." Press ► until the display shows CODE 07 (OUT2) .	
	Press ► until the display shows "17:30." Press ► until the display shows CODE 10 (OST) . Press ▲ or ▼ until the display shows "17." Press ► to move the cursor to Minute. Press ▲ or ▼ until the display shows "30." Press ► to display CODE 18 .	

9-4 DAYLIGHT SAVING TIME (CODE 18 to 19)

Set "Starting and Ending Date of Daylight Saving Time" after setting "OST." In case of setting no Special day in **CODE 02**, **CODE 18** is displayed following **CODE 10**.



	Jan.	Feb.	Mar.	Apr.	May.	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.
Figure for month	1	2	3	4	5	6	7	8	9	10	11	12

	1st week	2nd week	3rd week	4th week	Last week
Figure for week	1	2	3	4	L



When setting the last week of the month, set “L” for the last week even if the last week is the 4th week.

Example

Starting Date of Daylight Saving Time : Sunday of the last week in March.

Ending Date of Daylight Saving Time : Sunday of the last week in October.

Procedure	Display
Press ► to display CODE 18 . Starting Date of Daylight Saving Time is shown on the display.	
Press ▲ or ▼ until the display shows “3” for March.	
Press ► to move the cursor to set the week. Press ▲ or ▼ until the display shows “L” for the Last week.	
Press ► to move the cursor to set the day of the week. Move the cursor to the position of “SUN” for the day of the week by pressing ▲ or ▼.	
Press ► to display CODE 19 . Press ▲ or ▼ until the display shows “10” for October.	
Press ► to move the cursor to set the week. Press ▲ or ▼ until the display shows “L” for the Last week.	
Press ► to move the cursor to set the day of the week. Move the cursor to the position of “SUN” for the day of the week by pressing ▲ or ▼. Press ► or “SET” key to register the changed data, and then the display returns to the start of setting mode automatically.	



1. During the period of Daylight Saving Time, **S** symbol appears on the display.

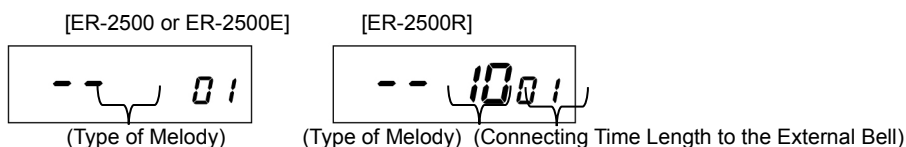
2. Once set, Daylight Saving Time will be adjusted automatically from the following year, in accordance with the setting data.

10 SETTING OPTION

Press “**OPTION**” key to set “**Melody**” after inserting “**Key-Card.**”

10-1 MELODY (CODE 01)

Set “**Melody**” of internal time signal. ER-2500R can control connecting time length to external bell, buzzer or chime.



Press ▲ or ▼ to select the desired number from the following table.

◆ Initial data=- - (Nothing)

Number	Melody
- -	Nothing
1	Chime
2	Original Melody

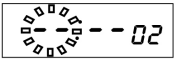


1. ER-2500 can sound time signal by selecting the “1” or “2.”
2. ER-2500R can control connecting time length to external bell from 1 to 60 seconds.
3. (When using external bell with ER-2500R)
 - ◆ Select the “1” or “2” in **Type of Melody** setting.
 - If select the “- -(Nothing),” ER-2500R cannot sound external time signal.
 - ◆ ER-2500R sounds both internal and external signal at the same time.
 - When setting no sounds of internal signal, turn down the volume.
4. When pressing  key, you can confirm melody for 10 seconds. (ER-2500R sounds Melody for time set in **Connecting Time Length**. Adjust volume by Phillips screwdriver.



Example (In case of ER-2500R)

Melody= "1" (Original Melody), Connecting Time Length=15 seconds

Procedure	Display
Press "OPTION" key after inserting "Key-Card." Current setting data is shown on the display.	
Press ▲ or ▼ until the display shows "2."	
Press ► to move the cursor to set Connecting Time Length. Press ▲ or ▼ until the display shows "15."	
Press ► to display CODE 02 as the next setting item.	

10-2 TIME SIGNAL (CODE 02 to 23)

Set the time and the day of the week to sound “Time Signal.”

After setting the time, select the day of the week.

ER-2500 sounds “Time Signal” in the days of the week that is lit up.

ER-2500 can set “Time Signal” up to 22 times.

◆ Initial data: Time=- - : - - The day of the week=All days

Key									
Day of the week	SUN	MON	TUE	WED	THU	FRI	SAT	ALL days are lit on.	ALL days are lit off.

Example

Time=AM9:00, The day of the week=Mon, Tue, Wed, Thu, Fri

Procedure	Display
Press or until the display shows “9.”	
Press to move the cursor to set the minute.	
Press or until the display shows “00.”	
Press to move the cursor to set the day of the week. Press and key to light off “SUN” and “SAT.”	
Press to display CODE 03 to set the next time and the day of the week of Time Signal.	

11 CONNECTION TO EXTERNAL TIME SIGNAL (ER-2500R)

⚠ WARNING



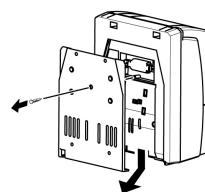
Disconnect a power plug before connecting to an external time signal.

ER-2500R has a relay contact output and commercial power output.

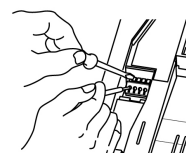
An external bell, buzzer or chime, which are operated in the following methods, is useable. (Contact capacity: 5A 30V DC)

Procedure

1. Disconnect a power plug. Remove screw and an attached wall mounting plate as illustrated.

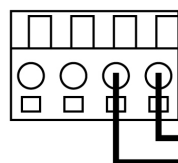


2. Connect a wire (accessories) to a terminal block using a screwdriver as illustrated.

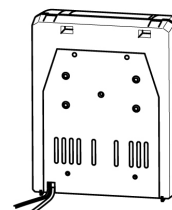


In case of connection is made to a chime, etc. using ER-2500R as a contact.

External
time signal



3. Take out wires through the takeout port as illustrated and attach the wall mounting plate to body.



12 REPLACING INK RIBBON CASSETTE

Use only **ER-IR102E** ink ribbon cassette.

Replace an ink ribbon cassette as below, if the printing is too light.

⚠ CAUTION	
	Never touch a printer head. It is very hot just after printing and you could get burned.
	Disconnect the power cord from a plug socket.
	Wash your hands/body immediately with soap if the ink ribbon rubs off on them.

Procedure

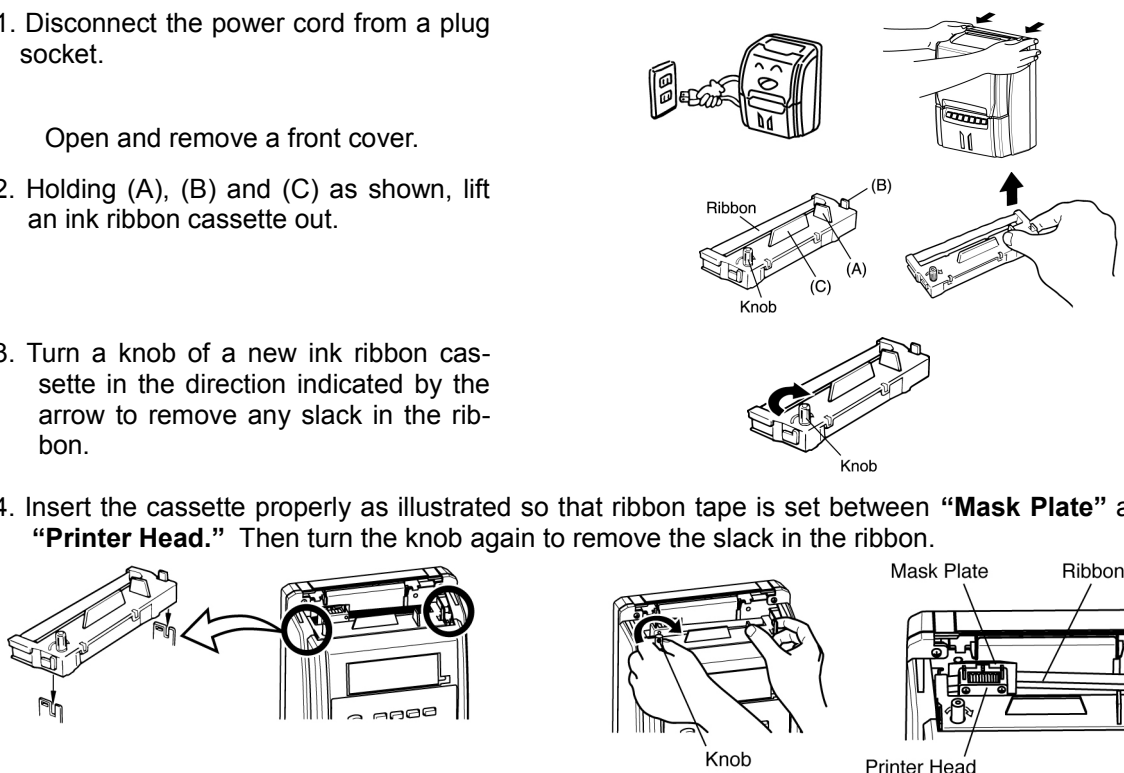
1. Disconnect the power cord from a plug socket.

Open and remove a front cover.

2. Holding (A), (B) and (C) as shown, lift an ink ribbon cassette out.

3. Turn a knob of a new ink ribbon cassette in the direction indicated by the arrow to remove any slack in the ribbon.

4. Insert the cassette properly as illustrated so that ribbon tape is set between “**Mask Plate**” and “**Printer Head**.” Then turn the knob again to remove the slack in the ribbon.



5. Close the front cover and connect the power cord.

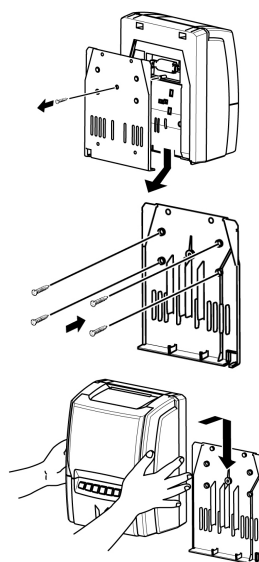
13 WALL MOUNTING AND LAID-DOWN POSITION INSTALLATION

⚠ CAUTION	
!	If mounting on a wall, make sure the wall is strong enough to hold the mount and recorder.
△⊘	Mount ER-2500 by an attached wall mounting plate. Do not use other materials.
⏏	Disconnect a power cord before installing on wall.

Wall Mounting

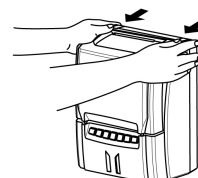
If hanging ER-2500 on a wall, use the following procedure.

1. Remove a screw and an attached wall mounting plate as illustrated.
2. Fix the wall mounting plate to a wall with the included 4 screws (accessories).
3. Install ER-2500 into the wall mounting plate as illustrated.



Laid-Down Position

1. Remove a front cover.
2. Press the  or "Laid Down Position."
3. The clock display will turn upside down.



PM MON 5:31 27 → 1 E:01 L2



The time on the display shows 24-hour format only.

14 ERROR CODES

Error codes	Problem	Solution
<i>E-00</i>	Time card is not inserted far enough to where automatic feed activates.	Insert time card to where automatic feed starts.
<i>E-01</i>	Time card is inserted on the wrong side.	Insert time card on the other side.
<i>E-02</i>	ER-2500 cannot read holes on time card correctly.	Check if any holes are covered. Check if time card is bent or damaged.
<i>E-04</i>	6 printings or 4 printings (In case of using Daily Total Hours function) have been already completed in a day. - Improper print was made by manual operation.	
<i>E-05</i>	150, 130 or 50 time cards have been already inserted in a day/month.	ER-2500 can handle up to 150, 130 or 50 time cards a day/month according to setting program.
<i>E-11</i>	When setting ER-2500, invalid data is input.	Input correct data.
<i>E-6900</i> <i>E-6901</i> <i>E-6902</i>	Automatic feed does not carry time card smoothly.	Do not hold time card during printing. Check if time card is bent or damaged.
<i>E-90</i>	Unusable external key is pressed.	
<i>E-91</i>	When setting ER-2500, Special day and Holiday are set to the same day of the week.	Input correct data.
<i>E-EE</i>	Printer malfunction.	Try to get normal printout by disconnecting or connecting the power cord.

15 CAUTION CODE

Caution Code	Problem	Solution
--------------	---------	----------

C-05	When you try to revise Machine Mode, Pay Closing Date, Date, LST, or Daily Total Hours, all time data is deleted.	If you press “SET” key All time data is deleted and the revised data is registered. If you press “CANCEL” key The revision is canceled without deleting time data.
---	--	--

16 TROUBLE SHOOTING

CAUTION

	Never disassemble the instrument by yourself.
	Contact your dealer or distributor if you could not solve the problem after checking the following table.

Problem	Points to Check	See
No display	Is the power cord connected to the plug socket correctly?	1
No print out on time card	Is the ink ribbon cassette inserted correctly?	12
Card insertion obstructed	Is the card being inserted on the correct side? Is the card bent or damaged?	5
Deviation in the printing line position	Is the card being inserted too strongly? Do you pull out the card during the printing process? Do you keep holding the card when it is automatically being pulled inside? Is the card damp?	5
Faint printout	Is the ink ribbon being used too long? Is the ink ribbon cassette inserted correctly?	12

17 SPECIFICATIONS

Product description	Max Electronic Time Recorder ER-2500
Power supply	Europe AC230V +6% -10% 50Hz
	Other countries AC220, 230V +6% -10% 50/60Hz
Outside dimensions	242 (H) x 187 (W) x 130 (D) mm [9 17/32"(H) x 7 3/8"(W) x 5 1/8"(D)]
Weight	2.5kg (5.51lbs.)
Power Consumption	Normal : 7W, Maximum : 30W
Input Current	0.2A
Clock system	Crystal quartz oscillation Monthly tolerance ± 15 seconds (Normal temperature : $25 \pm 5^{\circ}\text{C}$ / $68^{\circ}\text{F} \sim 86^{\circ}\text{F}$)
Display	Date, Hour, Minute, AM/PM, Day of week,  ,  ,  .
Printed information	Date, Hour/minute (Up to 6 columns), Daily Total Hours, Accumulation of Daly Total Hours, Symbol of  ,  ,  , 
Guarantee in case of power failure	Memory backup supported by an internal battery and a clock function guaranteed over a period of 5 years as accumulated power failure after assembling at factory.
Capacity	50, 130 or 150 employees
Printed color	Black and Red
Time card / Ink ribbon	MAX ER-M time card
	ER-IR102E (Black/Red) ink ribbon cassette
Operating temperature	$0^{\circ}\text{C} \sim 40^{\circ}\text{C}$ / $32^{\circ}\text{F} \sim 104^{\circ}\text{F}$
Storage temperature	$-20^{\circ}\text{C} \sim 60^{\circ}\text{C}$ / $-4^{\circ}\text{F} \sim 140^{\circ}\text{F}$

EU Declaration of Conformity

May, 1 , 2004

TYPE OF APPLICATION : Declared for the EC directive
89/336/EEC, 92/31/EEC, 73/23/EEC
93/68/EEC

APPLICABLE RULES : EN55022:1998,A1:2001,A2:2003 Class B
EN61000-3-2:2000
EN61000-3-3:1995,A1:2001
EN55024:1998,A1:2001,A2:2003
EN61000-4-2:1995,A1:1998
EN61000-4-3:1996,A1:1998
EN61000-4-4:1995
EN61000-4-5:1995
EN61000-4-6:1996
EN61000-4-8:1993
EN61000-4-11:1994
EN60950:2000

TYPE OF PRODUCT : Electronic Time Recorder

TRADE NAMES : MAX

MODEL NUMBER : ER-2500

APPLICANT : MAX Co., Ltd.
6-6,Nihonbashi,Hakozaki-cho,
Chuo-ku, Tokyo, 103 JAPAN

I HEREBY STATE THAT : The measurements / test shown in this application were made in accordance with the procedures indicated and the energy emitted, electromagnetic compatibility and safety by this equipment was found to be within the limits applicable. I assume full responsibility for the accuracy and completeness of these measurements /test and vouch for the qualifications of all Persons taking them.

I FURTHER STATE THAT : On the basis of the measurements / test made, the equipment tested is capable of operation in accordance with the requirements of the EC directive 89/336/EEC, 92/31/EEC, 73/23/EEC, 93/68/EEC and standards EN55022 Class B limit , EN55024, EN61000-3-2, EN61000-3-3 and EN60950 under normal use and maintenance.

APPROVED BY:

Takashi Sahara

Takashi Sahara / General Manager
Product Engineering
MAX Co., Ltd.



Recycled paper is used for this manual and its recyclable.

•This instruction manual is subject to change without notice due to functional enhancement.



MAX CO.,LTD.

6-6, NIHONBASHI HAKOZAKI-CHO, CHUO-KU, TOKYO, JAPAN

POST CODE: #103-8502

TELEPHONE: 81-3-3669-8131 FAX: 81-3-3669-7104

URL: <http://www.max-ltd.co.jp/int/> (GLOBAL Site)

<http://www.maxusacorp.com> (USA Site)

04•5 Vol.1