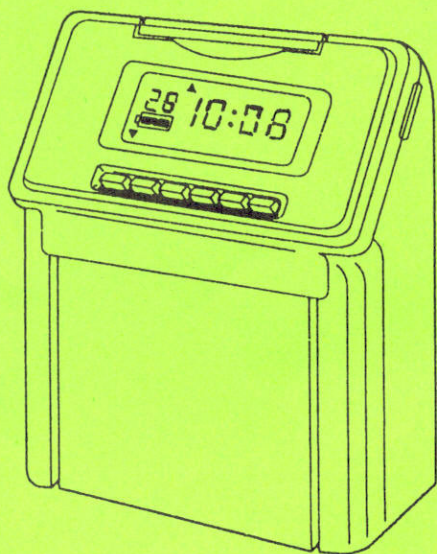


ACROPRINT TIME RECORDER

MODEL 420

OPERATION MANUAL



5640 DEPARTURE DRIVE
RALEIGH, NC 27616
TEL: 919-872-5800
FAX: 919-850-0720

06-0154-000

WARNING:

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his or her own expense.

"It is necessary to use shielded interconnect cables to insure compliance with FCC Class A limits for radio frequency emissions."

Caution: Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

1. The details of this Operation Manual are subject to change even without previous notification.
2. This Operation Manual has been prepared with the utmost care to cover all aspects of the time recorder's use.
If you feel, however, that some explanations are not adequate, unclear, or difficult to understand, please do not hesitate to contact the dealer or the shop from which you have purchased your Time Recorder.
3. Be sure to use your Time Recorder after you have fully understood the hardware and software specifications and limits.
4. No part of this publication may be reproduced, stored in a retrieval system, or transmitted, in any form or by any means, mechanical, photocopying, recording or otherwise.

INTRODUCTION

Thank you for your purchase of a Quartz Time Recorder, and we are confident that this time recorder will give you the fullest satisfaction. Items such as the time and closing day are preset at the factory. After plugging in the power, the recorder may be used immediately. Be sure to read this operation manual carefully before you start using your Time Recorder.

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3. This operation Manual has been prepared with the utmost care to cover all aspects of the time recorder use. If you feel, however, that some explanations are not adequate, unclear, or difficult to understand, please do not hesitate to contact the dealer or the shop from which you have purchased your time recorder.

FEATURES

This Time Recorder is quiet and reliable for today's competitive workplace. Features include:

Smooth and quiet operation

Time cards are inserted into the upper slot and printed by the dot matrix printer, and alignment is automatic.

2 color print

Schedule registrations are normally printed in black, while registrations such as late arrivals and early departures are indicated in red ink.

Battery backup

The battery backup feature maintains both the internal clock and program for up to 36 months in the event of a power failure. The optional full operation battery last 10 days or provides up to 200 prints.

Day advance time

Day advance time can be programmed.

3 pay periods

Three different pay periods are available: weekly, biweekly, or monthly.

Automatic differentiation of time card's front and back for monthly card.

Auto-feed/auto-eject mechanism

Perpetual calendar (programmed up to 2029)

Daylight saving time setting

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ENVIRONMENTAL CONDITIONS

DO NOT USE TIME RECORDER IN ANY OF THE FOLLOWING LOCATIONS:

- * Places subject to high humidity and dust.
- * Places exposed to strong or continuous vibrations.
- * Places exposed to direct sunlight.
- * The temperature range in which all functions of the Time Recorder will operate correctly is from -5°C to 45°C . Be sure therefore to place and use your time recorder only in locations in which time temperature range is not exceeded. Take care also not to subject your time recorder to any sudden, sharp temperature variations.
- * When the time recorder is used mounted on a stand or base, the height of the base should be around 70 or 80cm.
The time recorder may also be mounted on a wall. The appropriate fittings for base and wall are included.

CAUTION: Place the time recorder in a position close to the wall outlet so that it is easily accessible to disconnect.

Power supply

It is essential that the time recorder should be operated on the correct voltage and frequency.

Do not use the time recorder in premises subject to considerable power fluctuations.

If any problem or breakdown has arisen, contact the vendor from whom you purchased your time recorder.

I. BEFORE USING YOUR TIME RECORDER

PACKAGE CONTENTS

Unpack the Time Recorder and check its contents to ensure that the time recorder unit and all accessories as shown below are included:

Time Recorder Unit



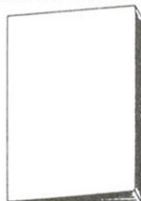
Seals for blocking up holes



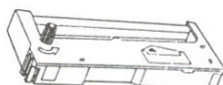
Use the seals to block up the three holes located at the back of the time recorder to prevent insects from coming in the time recorder, causing a malfunction.

When mounting the time recorder on the wall, block up only the lower center hole with the seal.

Operation Manual



Ribbon Cassette



Base-mount (desk top mount) fittings

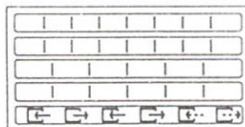


(Screws are used in common)

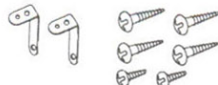
Keys



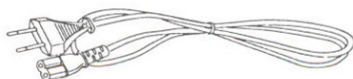
Operation Seal



Wall mount fittings



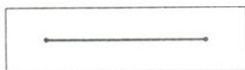
Power cable



230V only

NOTE: On 120V machines power cable is permanently attached.

Auxiliary sheet for mounting wall-mounting screws

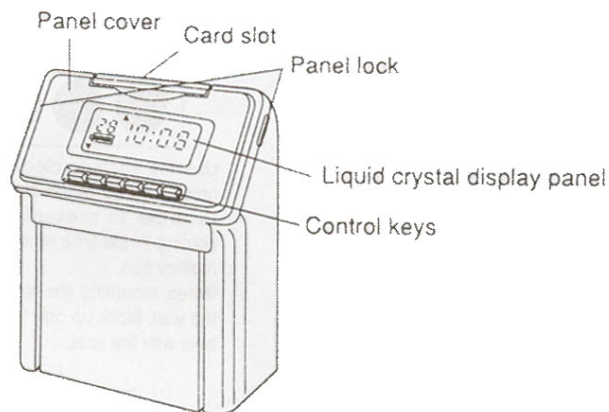


Cable clamp

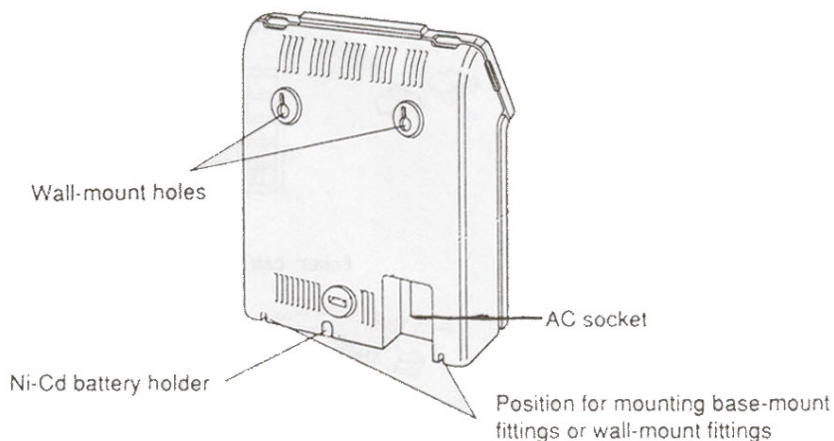


Name of Unit

Front View



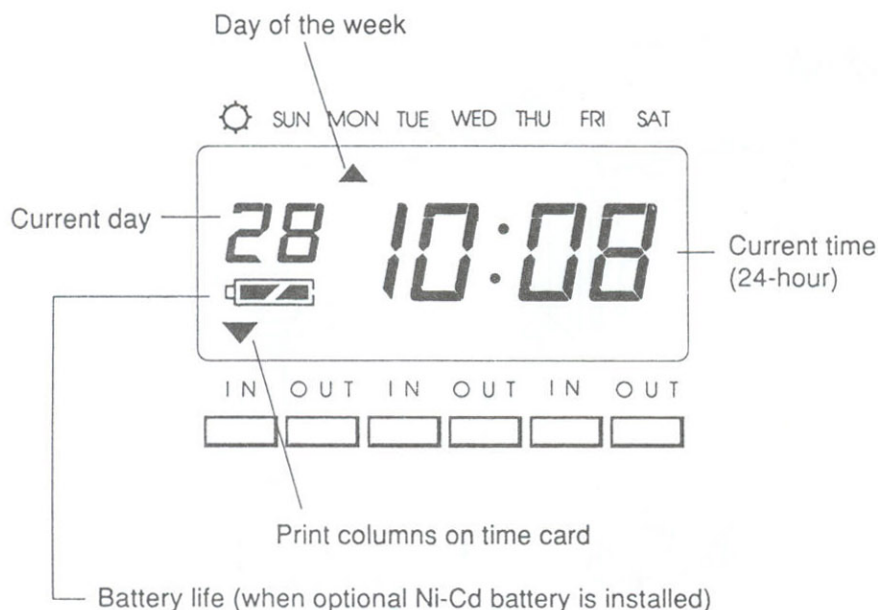
Rear View



Note: In order to prevent an insect from coming in, use the attached seals to block up the three holes located at the back of the time recorder except in the following cases:

- * When mounting the time recorder on the wall. In this case, block up only the lower center hole with the seal.

Display Panel



Full



Low. Connect to AC power to charge.



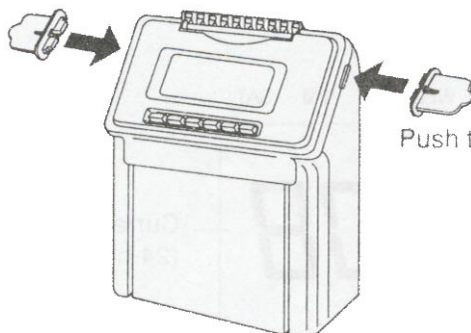
Too low for printing. Use AC power.

Notes:

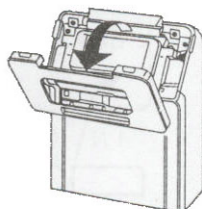
- * Battery life is not shown when AC power is used.
- * When the AC power is turned off, the battery life is displayed for a few minutes even if there is no battery. This is not a failure.

Inserting a Ribbon

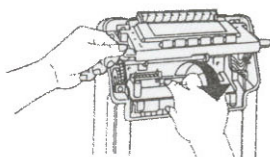
- 1 Remove the panel cover using the key provided.
The panel locks are located on both sides of the panel.



Push the key at both sides of the panel.

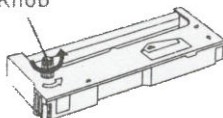


Open the panel cover.

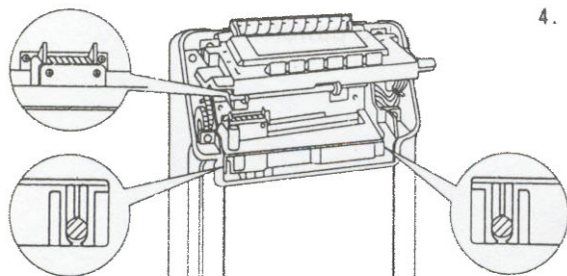


2. Lift the panel. Remove the ribbon cassette by slowly lifting the far side of the cassette.

Knob



3. Turn the knob of the new ribbon cassette in the direction of the arrow to stretch the ribbon.



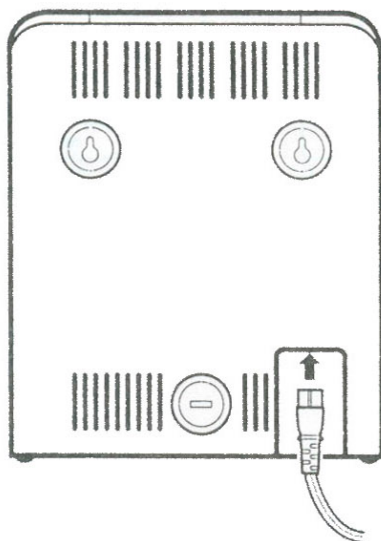
4. Hook the ribbon on the leading edge of the print head.
Insert both claws on the lower side of the ribbon cassette into the respective protrusions on the time recorder as shown. Push the cassette until it clicks into place.

If it is difficult to insert the ribbon, turn the knob while inserting.

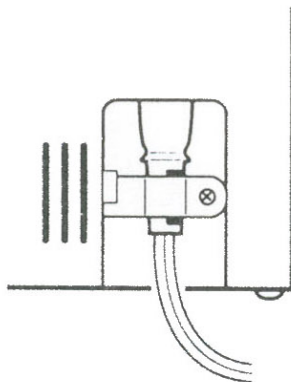
5. Turn the knob of the ribbon cassette in the direction of the arrow to stretch the ribbon.
6. Replace the panel cover.

Inserting the Power Cable (230V)

- 1 Insert the power cable into the time recorder.

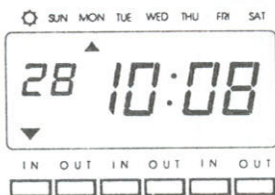


- 2 Hold the cable with the cable clamp and fix the clamp with a smaller screw.

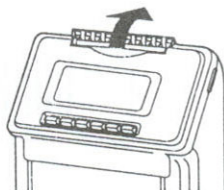


II. DAILY OPERATION

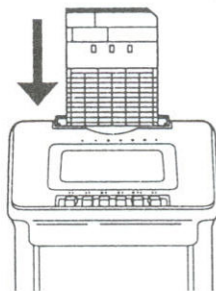
1. Check that the ▼ mark points to the column (IN,OUT) you wish to print. If necessary, push the key below the column to move the mark.



2. Open the card slot cover.



3. Insert a time card. The card is automatically pulled in and ejected after printing.



4. Close the card slot cover.

NOTE: Use cards of the designated specifications.

III SETTING

Date, time, closing day, line feed time, etc. are preset at the factory.

You can use the unit immediately. If the closing day, etc. is different, set the recorder according to the procedures described.

Remove the panel cover when setting the unit.

NOTE: See "Inserting a Ribbon" for how to remove the cover.

When the panel cover is removed, the display changes automatically, and the unit is ready to be set.

The display changes each time you press and release a key. It changes continuously as you press and hold the key.

Setting Pay Ending

Setting at the factory: close at the end of each month, 31st day.

PAY ENDING is selectable between monthly, weekly, and biweekly.



- 1 Press [SELECT] and set the ▲ mark to [PAY ENDING].



- 2 Press [M/H] and select 1 for monthly, 2 for weekly, and 3 for biweekly.



3-1 Monthly Closing



1. Press [D/M] to select the desired closing day.
2. Press [SET] after checking that the desired closing day appears on the display.

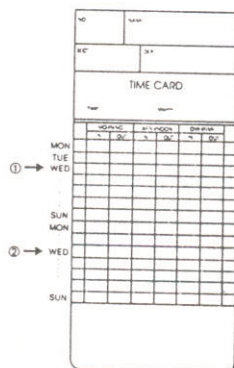
3-2 Weekly and BiWeekly Closing



1. Press [D/M] and specify the line on the card to print today.
2. Press [SET] after checking the desired line appears on the display.

NOTE: See "Time Card Specifications" on page 24 for the card format.

Example



For biweekly closing
(on Sundays):

If this is the first Wednesday of the current month today, press the [D/M] key and select "3" (see ① left). "3" means the third line from top.

If this is the second Wednesday of the current month today, press the [D/M] key and select "10" (see ② left).

Setting the Time



- 1 Press [SELECT] and set the ▲ mark to [TIME].
- 2 To change the hours, press [M/H] and select the desired hours (the seconds are automatically reset to 00).
- 3 To change the minutes, press [D/M] and select the desired minutes.
- 4 Press [SET] after checking the desired time appears on the display.

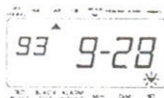
The seconds are 0. Press [SET] accordingly to a time signal. The unit is now set to the correct time.

NOTE: To adjust the seconds, put the ▲ mark to [TIME], and press [SET]. This resets the seconds to 0.

Setting the Date



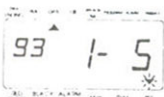
- 1 Press [SELECT] and set the ▲ mark to [DATE].



- 2 To change the year, press [Y/FUNC] to display the desired year.



- 3 To change the month, press [M/H] to display the desired month.



- 4 To change the day, press [D/M] to display the desired day.

- 5 Press [SET] after checking the desired date appears on the display.

Setting and Canceling DAYLIGHT SAVING TIME

The current time is put forward by one hour when you set D.S.T. Close the panel after setting D.S.T. and the ▲ mark lights up below the ☀ mark.

Setting D.S.T



- 1 Press [SELECT] and set the ▲ mark to [D.S.T.].



- 2 Press [M/H]. The hours will advance in one hour units.

- 3 Press [SET].

NOTE: Upon closing the panel, the ▲ mark below the ☀ mark lights up.

Canceling D.S.T

- 1 Press [SELECT] and set the ▲ mark to [D.S.T.].



- 2 Press [M/H]. The hours will go back in one hour units.



- 3 Press [SET].

NOTE: Upon closing the panel, the ▲ mark below the ☀ mark goes off.

Setting the Line Feed Time

Setting at the factory: 5:00 (5 a.m.). Line feed time to set: :00

The line feed time is the time when the line to print on the time card changes. If the leaving time after a night shift, etc. is after midnight, the line to print remains on the previous day's line when the leaving time is before the line feed time.



- 1 Press [SELECT] and set the ▲ mark to [DAY ADV. TIME].
- 2 Press [M/H] and select the desired hours.
(Minutes may not set.)



- 3 Press [SET] after checking the desired line feed time is displayed.

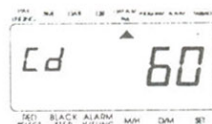
NOTE: The unit automatically prints in black when it is time to feed the line.

Setting Conventional/Decimal Minutes

Setting at the factory : sexagesimal printing



1 Press [SELECT] and set the ▲ mark to [DAY ADV.TIME].



2 Press [Y/FUNC] to select the Conventional/ Decimal Minute setting mode.



3 Press [D/M] and select sexagesimal or centigrade count.

4 Press [SET] after checking the desired printing type appears on the display.

Setting the Time Table Program

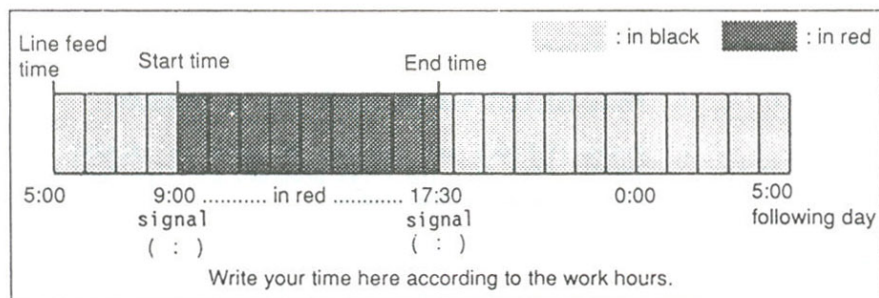
There is no preset program.

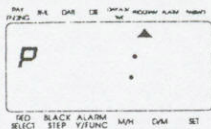
It is possible to select the printing color (black and red) to distinguish between work time and overtime, or give a signal at the start and end of work time.

The setting procedures are described below, and assume the following:

- * Print in red for work hours (from the start to the end of work time)
- * Print in black for over-time hours.
- * Time signal at the start and end of work hours.

Work hours are shown in the figure below.





- 5 Press [STEP] to go to the second program.



- 6 Press [Y/FUNC] and set the ▼ mark to [ALARM] and [BLACK].

- 7 Press [M/H] to set hours (17:00).

- 8 Press [D/M] to set minutes (17:30).



- 9 Press [SET] after checking the display shows the desired setting.

This completes the setting to give a time signal at the end of work hours (17:30) and switch to print in black.

NOTE: On closing the panel cover, the programs are automatically arranged sequentially starting with the line feed time.

Erasing the Program

- 1 Press [SELECT] and set the ▲ mark to [PROGRAM].

- 2 Press [STEP] to display the desired program to be erased.



- 3 Press [Y/FUNC] and select a position where the ▼ mark disappears for all of [RED], [BLACK] and [ALARM].

- 4 Press [SET].

- 5 Repeat steps 2 through 4 to erase another program,

SETTING THE NUMBER OF SECONDS for External Time Signal

Setting at the factory: 5 seconds. Time to set: seconds



- 1 Press [SELECT] and set the ▲ mark to [ALARM].



- 2 Press [D/M] to display the number of seconds you wish to set. The maximum setting is 30 seconds. Selection 0 second means no signal.

- 3 Press [SET] after checking the display shows the desired value.

SETTING AND CANCELING THE PASSWORD

When the password is set, you are asked to enter it after opening the panel. If the password you entered does not coincide with the setting, you may not change the setting values.

REGISTERING THE PASSWORD



- 1 Press [SELECT] and set the ▲ mark to [PASSWD].



- 2 Press [M/H] and assign the desired numbers to the first two digits.

- 3 Press [D/M] and assign the desired numbers to the last two digits.



- 4 Press [SET] after checking the display shows the desired numbers.

Entering the Password

How to Enter the Password on Opening the Panel.



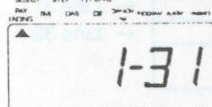
- 1 When you open the panel, the display shows "0000", and the ▼ mark for [SET] blinks.



- 2 Press [M/H] and enter the first two digits of the password in the first and second digits.

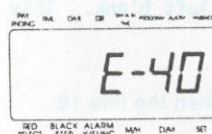


- 3 Press [D/M] and enter the last two digits of the password in the third and fourth digits.



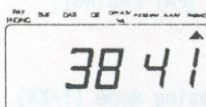
- 4 Press [SET] after checking the display shows your password.

- 5 If the password you entered is correct, the display turns into the closing day setting mode.

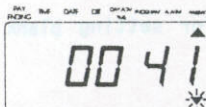


NOTE: If the password you entered is not the preset number, Error No. "E-40" appears on the display, and a buzzer goes. Press any key to return to the first step for entering the password.

Canceling the Password



- 1 Press [SELECT] and set the ▲ mark to [PASSWD].



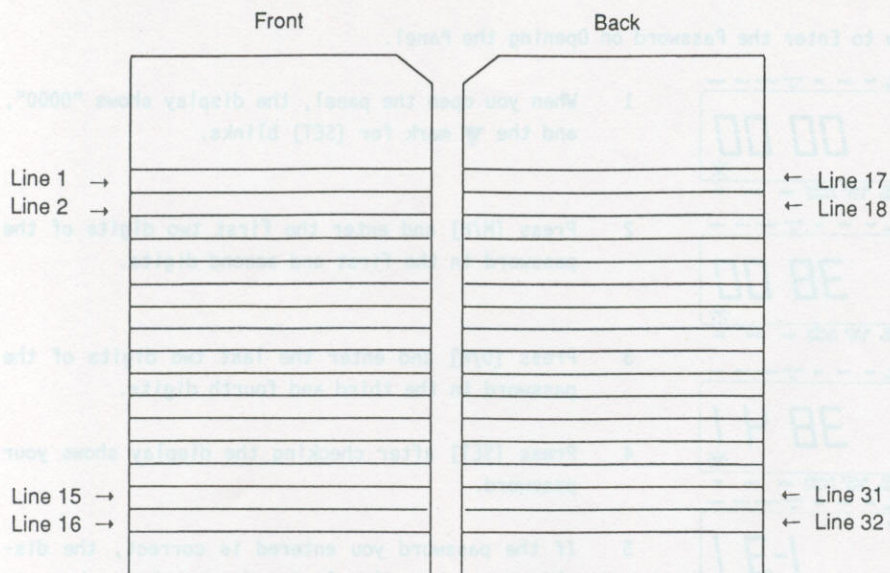
- 2 Press [M/H] and enter "00" to the first and second digits.



- 3 Press [D/M] and enter "00" to the third and fourth digits.

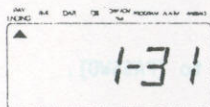
- 4 Press [SET] after checking the display shows "0000".

Setting Blank Line

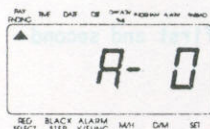


The cards used in this unit have 16 lines front and back (total 32 lines). If monthly closing is selected, one out of the 32 lines must be left blank. This is called blank line.

When using the S monthly card, "0" must be set for the blank line. Then the line 16 of the S card is set as the blank line.



- 1 Press [SELECT] and set the ▲ mark to [PAY ENDING].



- 2 Press [M/H] to display the monthly closing mode (1-XX).

- 3 Press [Y/FUNC] to display "A-XX" for setting blank line.

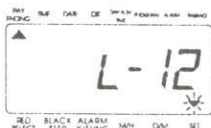


- 4 Press [D/M] and select the desired blank line.

- 5 Press [SET] after checking the desired blank line is displayed.

Setting Line Fix

You can specify a line and print the specified line only.

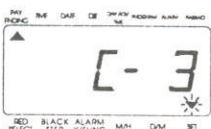


- 1 Press [SELECT] and set the ▲ mark to [PAY ENDING].
- 2 Press [M/H] to display the monthly closing mode (1-XX).
- 3 Press [Y/FUNC] twice to display "L-XX" for setting line fix.
- 4 Press [D/M] and select the desired line.
- 5 Press [SET] after checking the desired line is displayed.

NOTE: To cancel, set the fixed line to "0".

Setting Column Fix

You can specify a column and print the specified column only.



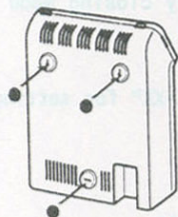
- 1 Press [SELECT] and set the ▲ mark to [PAY ENDING].
- 2 Press [M/H] to display the monthly closing mode (1-XX).
- 3 Press [Y/FUNC] three times to display "C-X" for setting column fix.
- 4 Press [D/M] and select the desired column. (1 = the column on the far left, 6 = the column on the far right).
- 5 Press [SET] after checking the desired column is displayed.

NOTE: To cancel, set the fixed column to "0".

IV MOUNTING ON A STAND/ON THE WALL

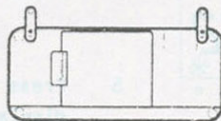
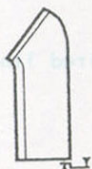
Mounting on a Stand

The time recorder can be a shelf or wall mounted using the supplied mounting fittings.



- 1 Block up the three holes located at the back of the time recorder with the enclosed seals.

- 2 Fix the base-mount fittings to the two screw holes provided on the bottom of the time recorder by using the smaller screws.

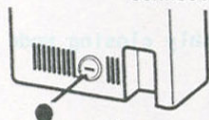


- 3 Fix the Time Recorder onto the shelf with the larger screws.

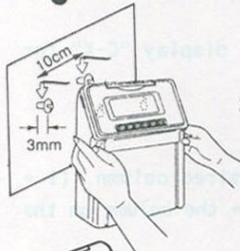
Mounting on a Wall

The unit can be mounted on a wall using the supplied mounting fittings.

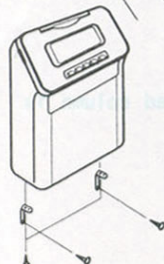
NOTE: When using AC power, connect the power cable plug to the AC cord connector on the time recorder before mounting it on the wall.



- 1 Block up the lower center hole located at the back of the time recorder with the enclosed seal.



- 2 Install the two larger screws on the wall 10cm apart. Apply the auxiliary sheet provided for the screws on the wall, and insert the screws on the holes for mounting the unit. The screws should protrude approximately 3 mm from the wall.

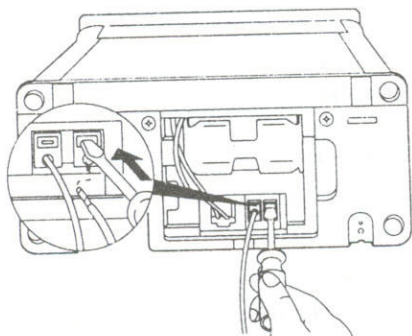


- 3 Hook the time recorder on the screws.

- 4 Install the wall-mount fittings on the bottom of the time recorder and the wall.

V CONNECTING AN EXTERNAL TIME SIGNAL

Follow the steps below to connect an external time signal device.



1. Disconnect Power.
- 2 Remove the battery chamber cover.
- 3 Connect two wires from the external time signal while pushing the upper part of the terminal board with a slotted screwdriver.
4. Locate the U-shaped cut-out on the back side of the battery chamber. Split the cut-out and lead the wires of the external time signal out of the battery chamber.
5. Replace the battery chamber cover.

Connecting Specifications for External Contact

- * Contact output: No voltage contact output 1 circuit
- * Contact capacity: DC Load 30V, 1.0 amp max

Caution: Do Not exceed max. ratings.

VI TROUBLESHOOTING

POSSIBLE FAILURES

The time recorder does not work

- * The power cable is not plugged into the socket.
- * The panel is open.

The print position does not match

- * The card is not of the specified format.
- * Check the closing day setting.
- * The time card is bent or curved.

WHEN AN ERROR NUMBER IS DISPLAYED

If an error number is displayed, consult the following table:

| NO. | ERROR DETAILS | ACTION |
|------|---|---|
| E-03 | Front and back of the card are reversed. | Turn over the card and insert it again. |
| E-05 | The card is not pulled correctly | Try again. |
| E-30 | The unit does not print. Printer motor or home position sensor is abnormal. | |
| E-33 | The Ribbon does not change between Red and Black. | Open the panel cover & check: * The card is not jammed. * The ribbon cassette is set correctly. |
| E-35 | Time card does not pop up. The card is not pulled correctly. The card feed motor or sensor is not operating properly. | Close cover after checking. If the error number appears again, contact your dealer. |
| E-37 | The unit does not print. | |
| E-38 | Printer head motor or sensor is not operating properly. | |
| E-40 | Password is incorrect. | Enter correct password. |

VII SPECIFICATIONS

| | |
|------------------------------------|--|
| Date and clock display | Digital 6 digits. Monthly accuracy $\pm 15s$ (normal temp) |
| Calendar | Year 1990 to 2029. Automatically adjusted to leap years, 31-day months and months with 30 or less days, and the day of the week |
| Display method | Liquid crystal with backlight. Date, day of the week, hours and minutes, print column, Ni-Cad battery life display. |
| Printing systems | Dot impact print in black and red |
| Card mechanism | Automatic pull and eject, automatic judgment of face and back |
| Power failure compensation | 3 years of cumulative power failures hours from the date of shipment |
| Print at power failure | Special Ni-CD battery - 10 days, assuming 20 prints per day (option) |
| Time program | Black and red switching, designation of the time for outputting an external time signal |
| Connecting of external time signal | Connection with a time blow device |
| Operating Environment | Temperature: -5° to $45^{\circ}C$, humidity: 20 to 80%RH, no dew formation. The unit operates normally at temperatures of $5^{\circ}C$ or below, but the print density, reaction of the liquid crystal display, and the number of prints at power failure are inferior to these at normal temp. operation. |
| Dimensions | 190(w) X 233(h) X 94(d) mm |
| Weight | Approx. 1.6kg(excluding Ni-Cad battery) |
| Power consumption | Approximately 20W |

Machine Noise Information Ordinance 3. GSGV, January 18, 1991:

The sound pressure level at the operator position is equal or less than 70 dB (A) according to ISO 7779.

TIME CARD SPECIFICATIONS

(1) Monthly Card

S Card (double-sided)

FRONT SIDE

REVERSE SIDE

Form free

NO. NAME

DEPT. PAY PERIOD ENDING

REGULAR TIME OVERTIME

IN OUT IN OUT

Signature

7 12 12 12 12 12 12 (7)

184 ± 0.8

15 × 6

6

29

8

1

Form free

NO. NAME

DEPT. PAY PERIOD ENDING

REGULAR TIME OVERTIME

IN OUT IN OUT

Signature

7 12 12 12 12 12 12 (7)

86.0 ± 0.5

16 × 6

6

23

R6

2

NOTE: Recommended Paper Thickness: 0.45 ± 0.05mm

Bescheinigung des Herstellers/Importeurs

Dies Gerät entspricht den Bedingungen der Niederspannungs-Vorschrift 73/23/EEC und dem EMVG nach 89/336/EEC.

This unit complies with the Low Voltage Directive 73/23/EEC and the EMC Directive 89/336/EEC.

Maschinenlärminformationsverordnung 3. GSGV, 18.01.1991: Der arbeitsplatzbezogene Schalldruckpegel beträgt 70 dB(A) oder weniger gemäß ISO 7779.

Die zugehörige Steckdose muß nahe beim Gerät angebracht und leicht zugänglich sein.

THIS DIGITAL APPARATUS DOES NOT EXCEED THE CLASS A LIMITS FOR RADIO NOISE EMISSIONS FROM DIGITAL APPARATUS AS SET OUT IN THE RADIO INTERFERENCE REGULATIONS OF THE CANADIAN DEPARTMENT OF COMMUNICATIONS.

LE PRÉSENT APPAREIL NUMÉRIQUE N'ÉMET PAS DE BRUITS RADIOÉLECTRIQUES DÉPASSANT LES LIMITES APPLICABLES AUX APPAREILS NUMÉRIQUES DE CLASSE A PRESCRITES DANS LE RÈGLEMENT SUR LE BROUILLAGE RADIOÉLECTRIQUE ÉDICTÉ PAR LE MINISTÈRE DES COMMUNICATIONS DU CANADA.

